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THE JOURNAL OF THE LOUISIANA STATE MEDICAL SOCIETY

Formerly New Orleans Medical and Surgical Journal

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VOLUME 114

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JANUARY, 1962

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DECEMBER, 1962

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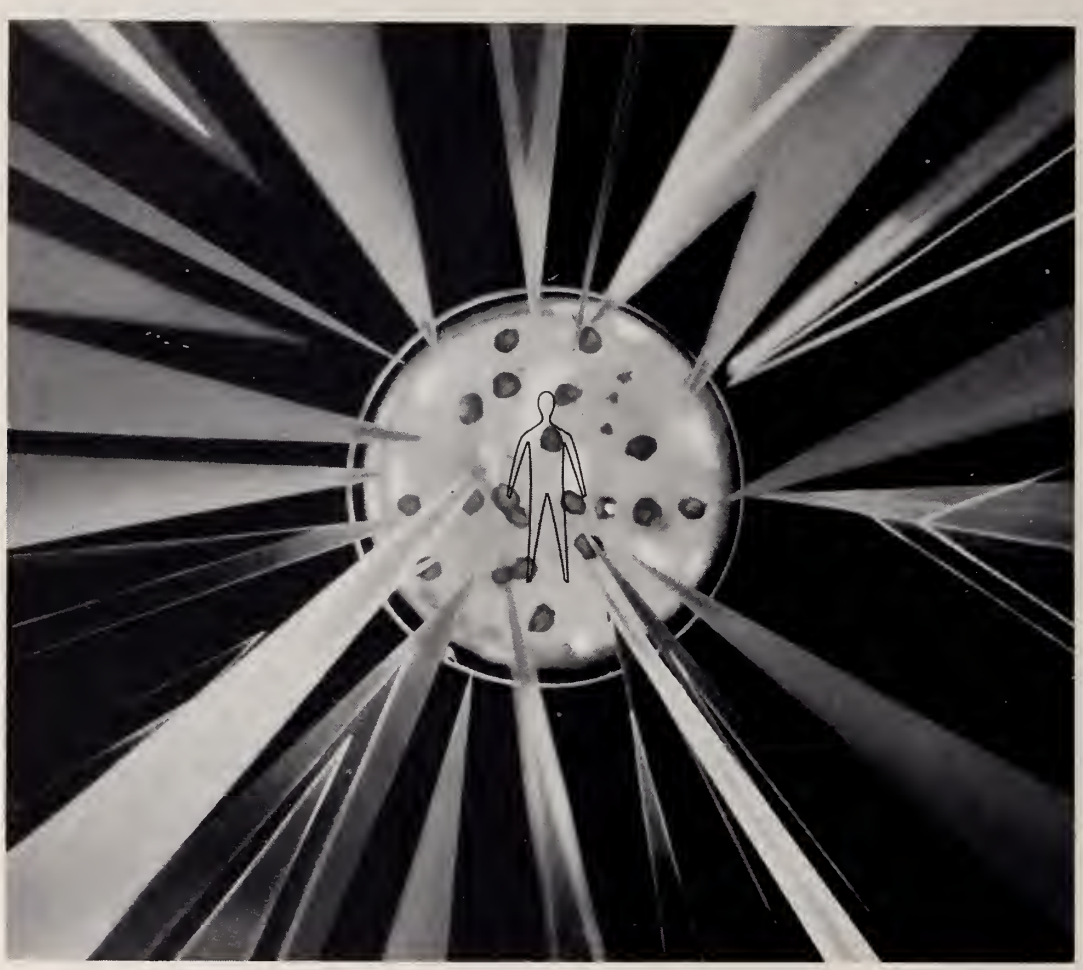
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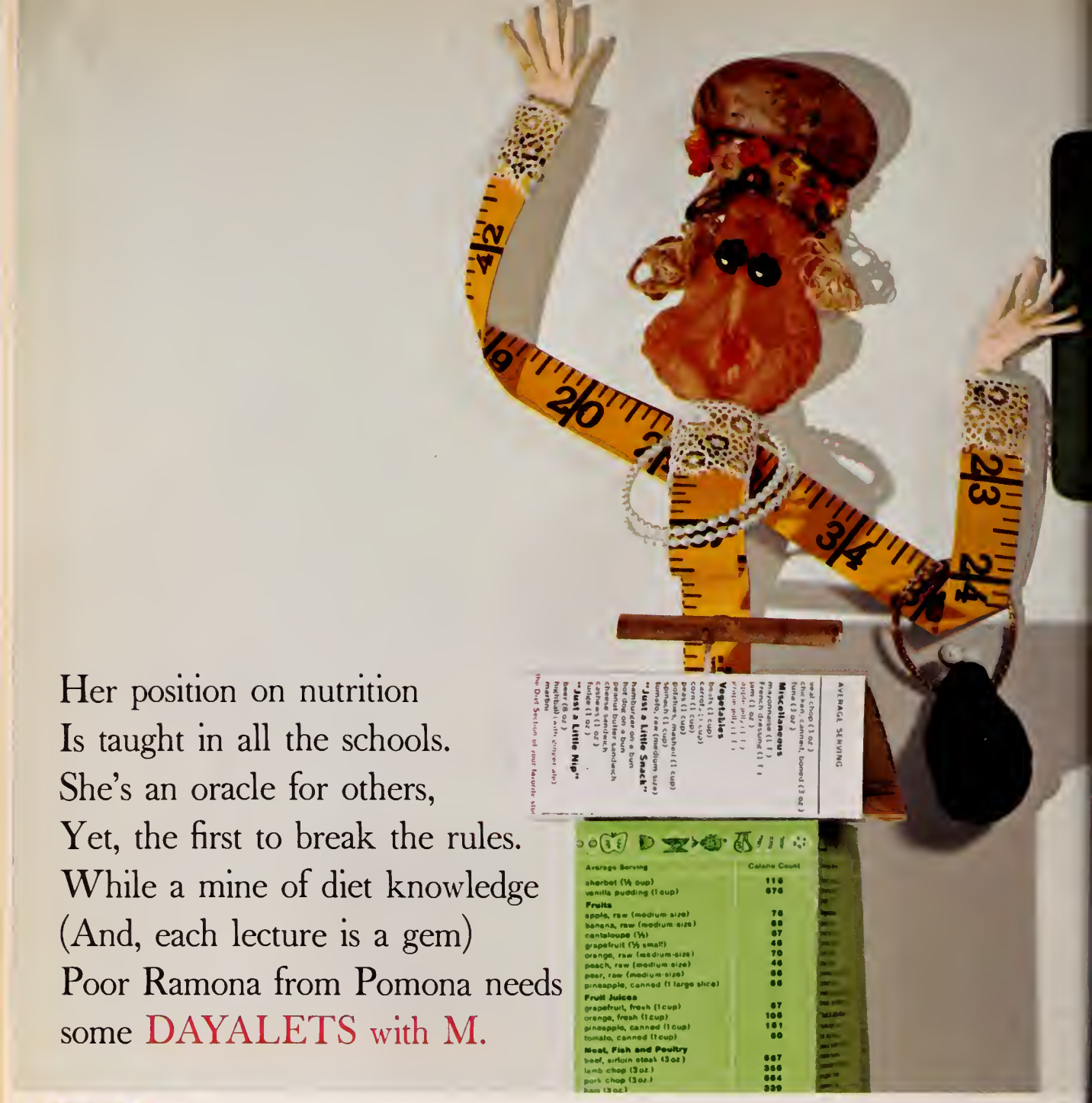
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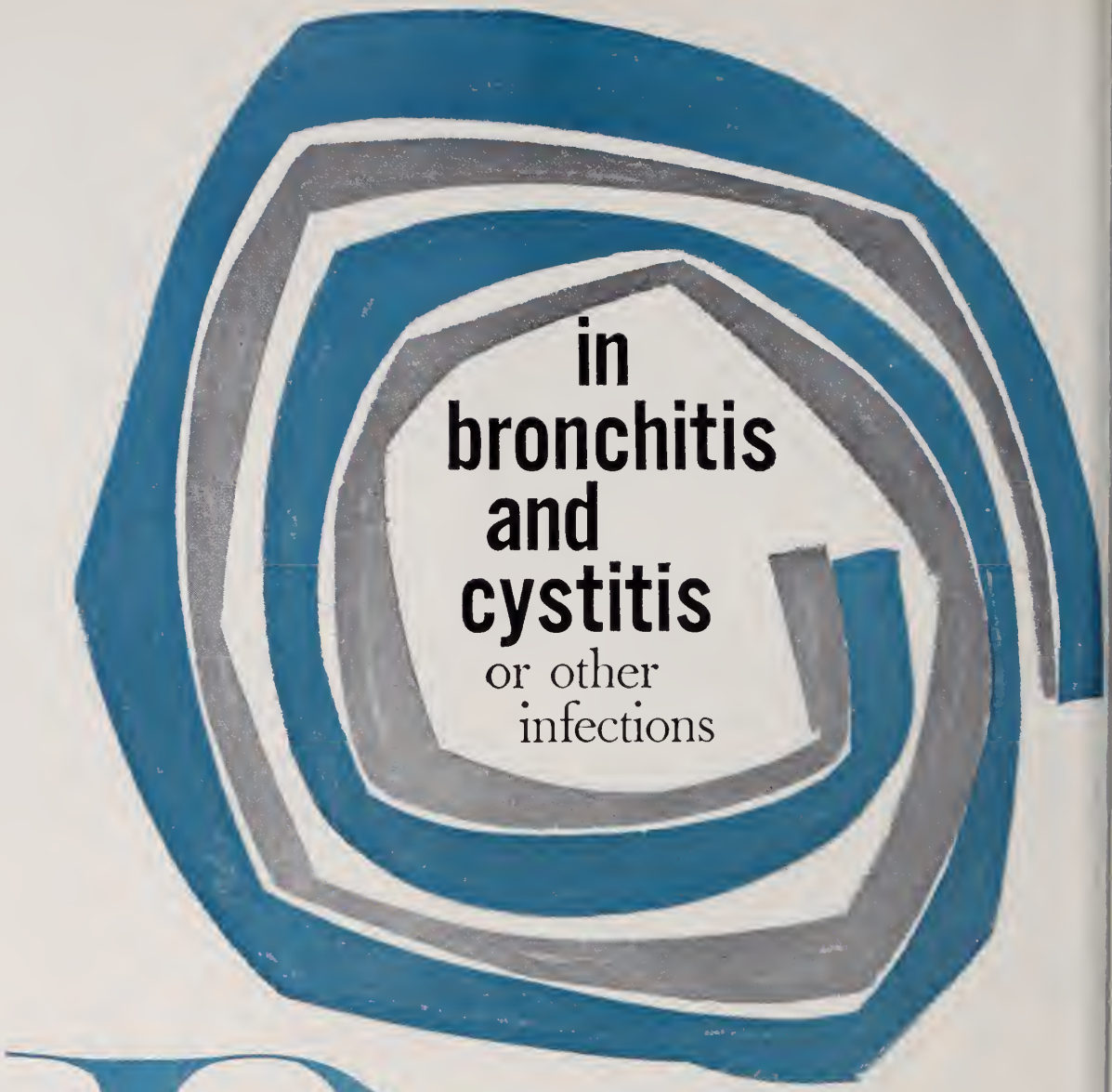
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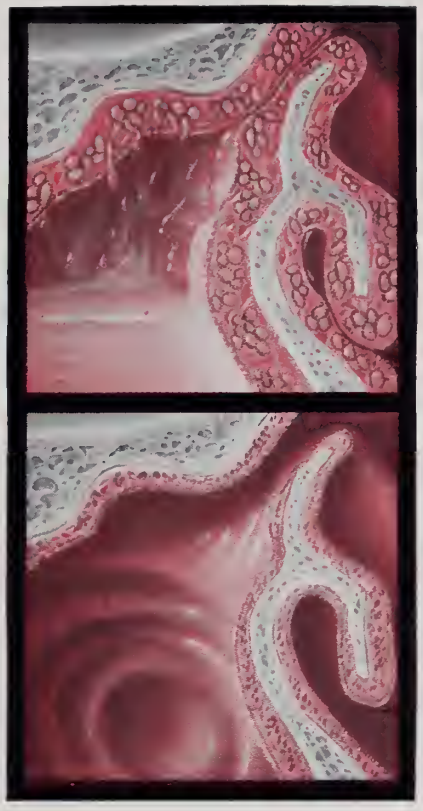
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1. Clark, T. E., and Jochem, G. G.: Angiology **11**:361 (Aug.) 1960.

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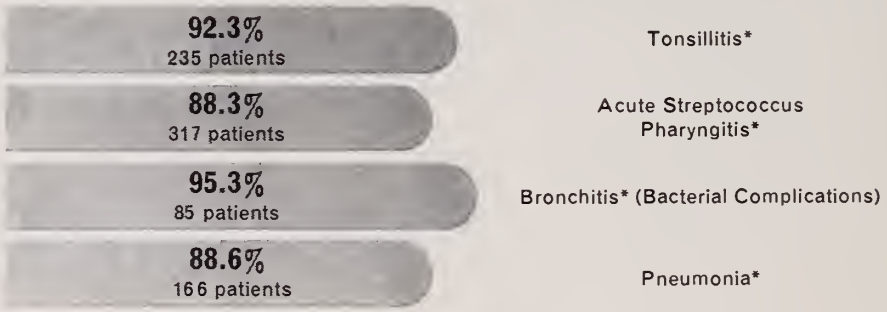
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The Age Factor in Acute Cholecystitis*

• An analysis of a series of 1,506 patients with acute cholecystitis observed at Charity Hospital during a twenty-four year period and the deductions drawn therefrom.

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SURGEONS have known for a long time that the properly prepared elderly patient tolerates most elective operations almost as well as a young person, but that he tolerates emergency operations relatively poorly. Emergency biliary tract surgery is especially hazardous for the geriatric patient.[5, 6, 10, 11] It may seem presumptious to present evidence before this society that this is true or to develop figures measuring to what degree it is true. However, arising from the greatly increased mortality of acute cholecystitis in elderly patients there are certain implications that frequently are not sufficiently appreciated by physicians, both surgeons and non-surgeons.

The purpose of this report is to review a series of 1,506 cases of acute cholecystitis, with particular reference to the relationship of the age of the patient to mortality and incidence of major complications.

Mortality in Charity Hospital Series

During the past twenty-four years (1937-1960), 1,506 patients with acute cholecystitis were observed at the Charity Hospital in New Orleans. There were 89 deaths; a mortality rate of 5.9 per cent. If the mortality percentages are separately calculated for each of four six-year periods the mortality curve shows an encouraging decline from the beginning of the twenty-four year period to the close, descending from a high of 12 per cent in the period 1937 to 1942 to a low of less than 5 per cent in 1955 to 1960 (Figure 1).

The Charity Hospital mortality of 5.9 per cent for acute cholecystitis is excessive; but it compares favorably with that reported from similar institutions in the United States (Table 1). In comparing

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** Now on duty with the United States Army Air Corps.

From the Department of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana, and the Charity Hospital of Louisiana at New Orleans.

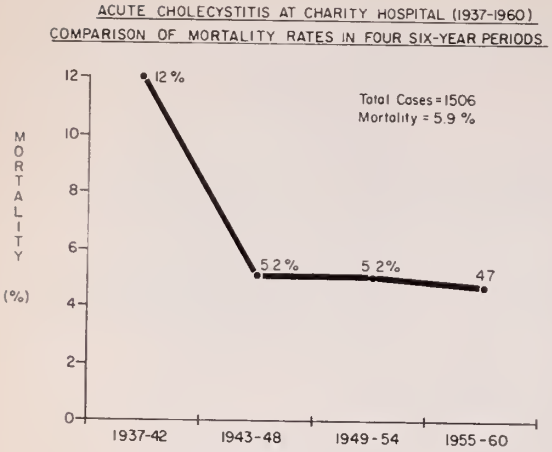


Figure 1.

the mortality rates reported from various clinics, it is important to keep in mind the types of patients that are likely to be admitted to a large publicly supported general hospital such as Boston City, Brooklyn Jewish, and Charity Hospital. The reports summarized in Table 1 emphasize again the sharp differential in the mortality rates in private versus ward patients.

At Charity Hospital it has not been the policy to regard every case of acute cholecystitis as an acute surgical emergency requiring early operation. About two-thirds of the patients were operated upon during the acute attack; and this has remained true throughout the twenty-four year period under study (Figure 2).

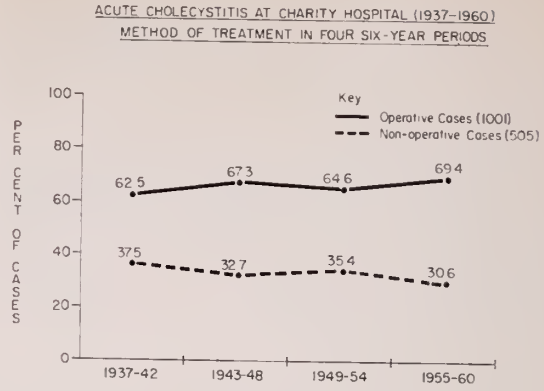


Figure 2.

Age Factor

Figure 3, showing the distribution and mortality by age, demonstrates the importance of the age factor in the prognosis of acute cholecystitis. Patients 60 years and older comprised less than one-third of the material, but accounted for almost three-fourths of the deaths. The mortality rate in the older group was almost six times as high as it was in the younger group.

As expected, the geriatric patient was more likely to have some serious associated degenerative disease such as hypertensive cardiovascular disease, arterio-

TABLE 1
ACUTE CHOLECYSTITIS RESULTS REPORTED BY OTHER AUTHORS

	Author	Institution	Years of Report	Number of Cases	Mortality (%)
WARD CASES	Byrne, J.J.[2]	Boston City Hosp.	? -1957	134	12.0
	Pines & Rabinovitch[9]	Brooklyn Jewish Hosp.	1932-1952	1480	7.1
	Becker, et al.[1]	Charity Hospital	1937-1960	1506	5.9
PRIVATE CASES	Colcock & McManus[4]	Lahey Clinic	1949-1954	132	1.5
	Mahorner & Becker[8]	Mahorner Clinic	1944-1959	134	0.7
	Jones, et al.[7]	St. Joseph Infirm. Piedmont Hosp. (Atlanta, Ga.)	1946-1959	180	0.5

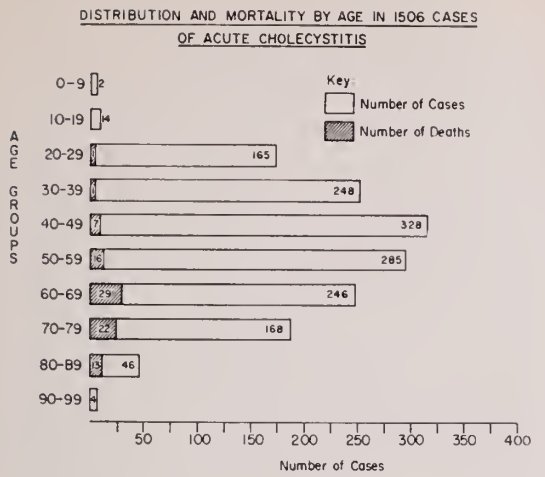


Figure 3. Distribution and mortality by age. Patients 60 years of age and older comprise 30 per cent of the material and 72 per cent of the deaths. The death rate of patients less than 60 years of age was 2.4 per cent; above 59 years it was 13.8 per cent.

sclerotic heart disease, diabetes, and chronic renal damage (Figure 4). Of course, these conditions adversely affected the prognosis.

Errors in Diagnosis and Complications

The extent to which errors in diagnosis contribute to the mortality in acute cholecystitis has been emphasized repeatedly. This is particularly true in the more complicated cases. In the present series when circumstances were such that a correct preoperative diagnosis was not made the mortality rate was more than tripled (Table 2). Diagnostic errors were more frequent in the older patients.

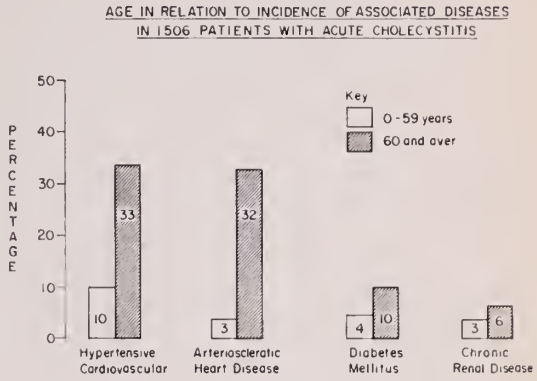


Figure 4.

Choledochostomy was added to cholecystectomy in 202, or 20.2 per cent, of the operative cases (Table 3). Sixteen of the 202 patients died, a mortality of 7.9 per cent, which is more than twice that for cholecystectomy above. Stones were recovered from one-third of the ducts explored. Among the patients submitted to choledochostomy the mortality rate seemed to be twice as high in the group with common duct stones as it was in the group in which no stone was encountered.

TABLE 2

ACCURACY OF PREOPERATIVE DIAGNOSIS IN RELATION TO MORTALITY RATE IN 1001 OPERATIVE CASES OF ACUTE CHOLECYSTITIS

Preoperative Diagnosis	No. of Cases	Per cent of Cases	No. of Deaths	Mortality (Per cent)	
Acute Cholecystitis	864	86.4	42	4.8	
Acute Appendicitis	54	5.4	11	20.4	
Perf peptic ulcer	22	2.2	4	18.2	17.5
Acute pancreatitis	5	0.5	1	20.0	
Others	56	5.6	8	14.3	

(0-59 = 90 Percent diagnostic accuracy)
(60 and older = 82 Percent diagnostic accuracy)

TABLE 3

COMMON DUCT STONES

	No. of Cases	Per cent of Operative Cases	Deaths	Mortality Per cent
Choledocholithiosis	68	6 8	8	11 8
No Choledocholithiasis	933	93.2	58	6 2
Choledochostomy	202	20.2	16	7 9

$\frac{1}{3}$ of common duct explorations yielded stones (Mortality = 11 7 %)

$\frac{2}{3}$ of common duct explorations did not yield stones (Mortality = 5 9%)

A comparison of the two age groups indicates that there was little difference in the frequency with which the common bile duct was explored, but the exploration was more likely to be positive in the older patient; and a positive choledochostomy was four times as likely to prove fatal in the elderly patient (Table 4).

Jaundice was an unfavorable prognostic sign, and it was present in 10 per cent of the patients in the entire series (Table 5).

TABLE 5

JAUNDICE

Age	No. of Cases	Per cent of Cases	No. of Deaths	Mortality Per cent
0-59	75	7.2	8	10.6
60&older	77	16.9	18	23.4
Totals	152	10.8	26	17 1*

* (4.6 % mortality in 1354 patients who were not jaundiced)

Seventeen per cent of the 152 jaundiced patients died; a mortality rate almost four times that observed in the much larger group of patients without jaundice. Jaundice was more than twice as common and more than twice as dangerous in the patients past 60.

Lack of agreement concerning the incidence and hazards of perforation of the acutely inflamed gallbladder is largely responsible for divergent views relative to the timing of operation. A review of the Charity Hospital experience with acute cholecystitis indicates that rupture of the gallbladder was found at operation or autopsy in 91 of the 1,506 patients (Table 6). Of 1001 patients operated upon 8.3 per cent had perforation of the gallbladder. This figure is a conservative one because it includes only those cases in which the operative note specifically described the presence of a gross defect in the gallbladder wall. Perforation into the free peritoneal cavity with generalized bile peritonitis was encountered in 28 (2.8 per cent) of the surgical cases; and more than one-fourth of these patients died. The perforation was localized to the pericholecystic area in 38 cases, and the mortality in this group was 15.8 per cent. Perforation into an adjacent viscus, usually the duodenum or liver, occurred 17 times, and was attended by a mortality of

TABLE 6

PERFORATION OF GALLBLADDER IN 1001 OPERATIVE CASES OF ACUTE CHOLECYSTITIS

Type of perforation	No. of Cases	Per cent of Cases	Deaths	Mortality (Per cent)
Free	28	2.8	8	28.6
Local	38	3.8	6	15.8
Viscus	17	1.7	3	17.6
Totals	83	8.3	17	20.5

15 of 23 conservotely treated patients who died had autopsy
8 proved perforations
7 free perforations

TABLE 4

AGE IN RELATION TO INCIDENCE AND MORTALITY OF COMMON DUCT STONES IN 202 PATIENTS HAVING CHOLECYSTECTOMY AND CHOLEDOCHOSTOMY

					Negative Choledochostomy				Positive Choledochostomy			
Age	No. of Cases	% of all Op. cases	No. of Deaths	Mortality Per cent	No. of Cases	% of Chole-dochos. cases	No. of Deaths	Mort. %	No. of cases	% of Chole-dochos. cases	No. of Deaths	Mort. %
0-59 yrs.	132	19.5	4	3.0	92	69.7	2	2.2	40	30.3	2	5.0
60 &older	70	21.2	12	17.0	42	60.0	6	14.3	28	40.0	6	21.4
Totals	202	20.2	16	7.9	134	66.3	8	5.9	68	33.7	8	11.7

17.6 per cent. Among the patients submitted to operation the mortality rate was four times as high in the group with rupture of the gallbladder as it was in the group in which the gallbladder wall appeared to be intact.

One can only speculate concerning the frequency with which rupture of the gallbladder occurred among the 505 patients who were not operated upon. It is of interest, however, that postmortem examination was performed in 15 of the 23 conservatively treated patients who died, and seven of them were found to have free perforation of the gallbladder with generalized bile peritonitis.

There were 89 deaths among the 1,506 patients comprising this Charity Hospital series, and gross perforation of the gallbladder was demonstrated at operation or autopsy in more than one-third of these fatal cases.

These data prove that, at least at Charity Hospital, rupture of the gallbladder is an important complication of acute cholecystitis. It is considerably more common in the elderly patient.

In Figure 5 are summarized much of

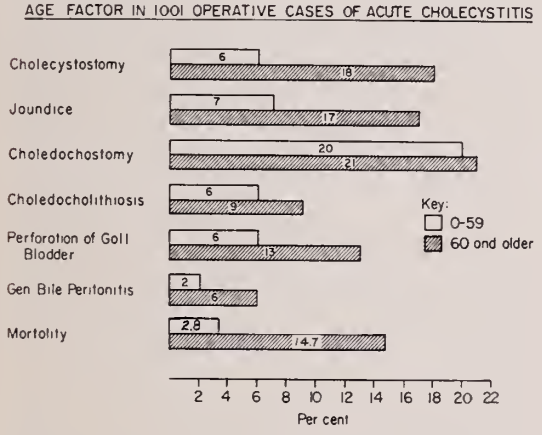


Figure 5. Age in relation to complications and mortality in 1,001 operative cases of acute cholecystitis.

the data measuring the extent to which the mortality and morbidity of acute cholecystitis are dependent upon the age of the patient.

Jaundice was more than twice as common in older patients. Although the common duct was explored with almost equal frequency in the two age groups, stones were encountered more frequently in the older patients. It was considered necessary to resort to the compromise procedure of cholecystostomy three times as often in the geriatric patients.

Rupture of the gallbladder was twice as common, and perforation into the free peritoneal cavity with generalized bile peritonitis was three times as common in the older patients.

And finally, the mortality rate was more than five times as high in the patients past 60.

Many surgeons advocate elective cholecystectomy for most patients with cholelithiasis, because they are convinced that the immediate risk of operation is less than the long-range hazards of gallstones.

A few years ago Glenn and Hays [6] analyzed the age factor in the surgical treatment of 4,050 patients with all types of benign biliary tract disease at the New York Hospital - Cornell Medical Center. One of their most interesting conclusions was that elective biliary tract surgery was tolerated remarkably well by the geriatric patient; in fact, the difference in the complication rate and mortality rate between the patients over 65 and those under 65 was almost insignificant. In contrast, the aged patient tolerated emergency biliary tract procedures relatively poorly. Both the mortality and complication rates were strikingly higher in the geriatric group.

These authors were convinced that elective cholecystectomy in the aged patient with symptomatic biliary tract disease was even more important than in the younger patient, who could better tolerate the emergency procedures if such became necessary. We believe that the Charity Hospital data lend support to this concept.

Summary

A series of 1,506 cases of acute cholecystitis observed at Charity Hospital in New Orleans during a twenty-four year period (1937-1960) has been reviewed with particular reference to the relationship of the age of the patient to mortality

and incidence of major complications.

There were 89 deaths, a mortality rate of 5.9 per cent. Patients 60 years of age and older comprised less than one-third of the material, but accounted for almost three-fourths of the deaths. The death rate of patients less than 60 years of age was 2.4 per cent; above 59 years it was 13.8 per cent.

The elderly patients were not only more prone to have some major associated degenerative disease, but also their biliary tract problem was likely to be more advanced and complex. Such complications as jaundice, common duct stones, and perforation of the gallbladder were much more frequent and dangerous in the older group.

The properly prepared elderly patient tolerates most elective biliary tract operations almost as well as a young person, but he tolerates emergency operations relatively poorly. Perhaps elective cholecystectomy in the geriatric patient with symptomatic cholelithiasis may be even more important than in the younger patient, who could better tolerate emergency operation if it became necessary.

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Selection of the Jaundiced Patient for Operation*

• Many lesions causing jaundice for which operation is unnecessary or strongly contraindicated are almost indistinguishable from those requiring operation. In all but the rarest cases, it should be possible to establish the diagnosis from the clinical impression together with information obtained from laboratory tests.

JOHN B. BLALOCK, M. D.
New Orleans

General Considerations

FEW ailments exhibit such an obvious reminder that something is amiss to the patient, his family and his physician as do those characterized by jaundice. This acts as an impetus to classify the type of jaundice that the patient has. Although this is desirable, it should not force us into making hasty decisions. In more than 90 per cent of such patients, the cause of jaundice can usually be determined promptly. By diligent assessment, categorizing most of the remaining cases as medical or surgical is possible. A few cases continue to evade positive diagnosis by any means short of continued observation or exploratory laparotomy. Improper selection of patients for these last two methods results in disconcerting, though not necessarily harmful, developments, but the economic aspects of prolongation of the illness are of real significance. Employment of medical treatment on a patient in need of operation results in further debility of the patient and deterioration of hepatic reserve. Conversely, submission of a patient with a non-surgical cause of jaundice, severe enough to be indistinguishable from obstructive jaundice, to the stress of an anesthetic and operation may prove disastrous. In general, in doubtful cases that ultimately prove to be obstructive, the patients are rarely endangered by observation for ten to fourteen days. On the other hand, performance of exploration on patients with medical jaundice, severe enough to be confused with obstructive jaundice, is attended by decided increase in morbidity and mortality rates, as compared with patients with surgical jaundice of the same degree. The greatest possible degree of diagnostic accuracy in these cases is therefore imperative.

Diagnostic Aids

Statistical studies of series of jaundiced patients have been undertaken in an effort to determine which features, in regard to the history, physical examination and laboratory tests, are of importance in differentiating medical and surgical causes of jaundice.[1, 2] Whereas experience has taught that no single factor or combination of factors is pathognomonic in any given patient, cases of the various types tend to have certain features in common. Some generalizations in regard to leads and differential diagnosis may be helpful. We know that in most series of jaundiced patients the ratio of medical and surgical causes is about the same. The cause is medical in most patients in the first four decades of life. In the fifth decade the cases are equally distributed between medical and surgical, and in the remaining cases, surgical causes predominate.[2] In the group due to surgical causes, females show a preponderance of common duct stones and strictures. Males are more commonly affected by malignant lesions causing obstruction of the biliary tract, with the exception that carcinoma of the gallbladder is more common in females.

In regard to history, sufferers of chronic hepatic disease and obstruction caused

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* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, 1961 in New Orleans.

From the Department of Surgery, Ochsner Clinic, New Orleans.

by neoplasms are more prone to delay seeking medical advice than are those with acute hepatic ailments and benign obstruction. This is probably explained by the incipiency of onset and more frequent freedom from pain in the former cases. Upper abdominal pain, especially colic and referred pain, is suggestive of benign obstruction, although some degree of pain has been experienced in more than 50 per cent of patients with malignant obstruction when first seen. Previous attacks of jaundice, true chills and previous operations related to the biliary tract strongly suggest a benign obstructive process. A minority of patients with hepatitis and benign obstructive disease lose significant weight unless the process is of prolonged duration, whereas loss of weight is almost always associated with malignant obstructive processes.

In regard to the physical examination, the intensity of the jaundice is of little differential value. Pruritus manifested by cutaneous excoriation is probably a little more frequent in surgical cases, but is of little real differential value. Enlargement of the liver early in the illness almost certainly implies a medical basis, although after this time hepatomegaly is of little aid. Cachexia, ascites, and splenomegaly are most frequently associated with cirrhosis or advanced carcinoma, but occasionally occur in benign obstructive processes of many months' duration. A palpable gallbladder indicates a surgical cause of jaundice. Courvoisier's law of the association of a palpable gallbladder with malignant obstruction holds true in the majority of cases, but this finding due to obstruction from stones is sufficiently frequent to lessen its differential value in an individual case.

The tremendous number and complexity of the functions of the liver, coupled with the liver's great reserve, explain the difficulty in devising exacting liver function tests. Whereas the result of no single laboratory test or combination of tests is pathognomonic of any given condition, several tests are sufficiently reliable to provide information indicative of certain abnormalities in most instances. Except in mild cases of pure retention jaundice, as in hemolytic anemia, there is almost always a combination of retention and regurgitation at work in patients with jaundice, whether it be primarily hepatocellular, with intrahepatic biliary obstruction or extrahepatic obstruction. Abnormal results of the bromsulphalein retention test, cephalin flocculation, thymol turbidity and serum transaminase studies are more indicative of hepatic parenchymal damage, whereas elevation of the alkaline phosphatase and cholesterol values more frequently indicates obstruction of the biliary ductal system.

Roentgenography may be of great help in evaluating the jaundiced patient.[3-5] By simple scout films of the gallbladder and ductal region, gallstones may be demonstrated in perhaps 10 per cent of patients with cholelithiasis. However, common duct stones are rarely diagnosed by this means. There is distinct parallelism between the function of the liver that excretes bilirubin and the one that excretes the iodinated compounds used in opacifying the ductal system. This fact has led to the fairly prevalent, though not justifiable attitude, that it is useless to attempt visualization of the gallbladder in patients with jaundice. With the development of more rapidly excreted contrast mediums in adequate concentrations, without the concentrating function of the gallbladder, there has been a revival of interest in radiographic study of patients with mild to moderate jaundice.[5] Except when jaundice is receding, seldom is visualization accomplished if the total bilirubin level exceeds 5 mg. per 100 ml., whereas a gratifying percentage of patients show opacification if the bilirubin is 3 mg. per 100 ml. or less.[3] Planograms (through the plane of the gallbladder and ductal system) represent a technical refinement that increases the chance of satisfactory study.

Liver biopsy is occasionally desirable as a diagnostic aid, but is frequently contraindicated in jaundiced patients because they are especially susceptible to the ma-

jor complications of the procedure, that is hemorrhage and bile leakage from the puncture site. The former can usually be minimized by administration of vitamin K preparations to return the prothrombin concentration to a safe level. Gastroenterologists are reluctant to perform percutaneous liver biopsy in patients with moderate to severe degrees of jaundice which may be due to obstruction. In such situations, if it is reasonably certain that biopsy may spare the patient laparotomy, we favor biopsy, with the understanding that if bleeding or bile leakage occurs, these will be controlled by operative measures. As an alternative, we frequently perform open liver biopsy with use of a local anesthetic and control of the biopsy site by suture.

Causes of Jaundice

Jaundice may be defined as yellow discoloration of the body tissues imparted by the presence of bile pigments in concentrations exceeding two or three times the normal value of up to one milligram per 100 ml. In view of the enormous reserve of hepatic function and the fact that in health the liver clears the blood of approximately 300 mg. of bilirubin every twenty-four hours, evidence of elevated bilirubin may indicate any one or more of several possibilities. There may be demands for clearance in excess of the capabilities of the liver or inability to excrete the normal daily production because of parenchymal hepatic dysfunction, or a mechanical impediment to flow somewhere between the bile canaliculi and the intestine. The concept that bilirubin occurs in two forms is the basis for our working hypothesis as to the mechanism of the various forms of jaundice.[6, 7] That portion of bilirubin which yields the indirect reaction to the van den Bergh test is regarded as the initial protein-bound bile pigment produced on hemoglobin breakdown. This factor is nonfilterable by the kidneys, and only after being separated from the globulin molecule and conjugation with glucuronic acid on passage through the hepatic cells is it changed to the form that is filterable by the kidneys, and which gives the direct phase of the van den Bergh reaction.

Retention jaundice is the term applied to those cases with deficient clearance of the unconjugated protein-bound bilirubin by the hepatic cells. This may be due to inability of the impaired liver to excrete the normal daily production of bilirubin, or it may be due to inability of the normal or diseased liver to handle excessive amounts of bilirubin in hemolytic diseases.

The remaining mechanism of jaundice is regurgitation of protein-free conjugated bilirubin into the blood stream after having been excreted by the hepatic cells. Hepatocellular damage can be due to back pressure from obstruction, and to viral, bacterial, chemical or medicinal injury. Necrosis of hepatic cells, with or without rupture of the bile canaliculi, is the route by which the bilirubin gains access to the interstitial spaces and thereby to the lymphatic system and the hepatic sinusoids. Estimation of the proportion of icterus due to indirect and direct bilirubin is of little value in differentiating hepatocellular and obstructive jaundice. Intrahepatic obstruction of smaller biliary radicals is a common occurrence in primary hepatic disease, and some degree of hepatocellular damage is the inevitable sequel of obstruction of the major biliary radicals. Retention jaundice is most frequently due to hemolytic ailments, either congenital or acquired, and is usually identified with little difficulty. The congenital form is usually recognized by a long history of anemia and jaundice and a positive family history. In either type, clinical and laboratory observations include splenomegaly, anemia, reticulocytosis, absence of bilirubin in the urine and increased quantities of urobilirubin in the stool and urine. Of differential value is increased red cell fragility in the congenital form and a positive Coombs' reaction in the acquired form. Evidence of impaired hepatic function is usually lacking, but these patients have a greatly increased incidence of biliary calculi. Sufferers of congenital hemo-

lytic anemia should be treated by splenectomy with virtual assurance of cure, and a high percentage of selected patients with acquired hemolytic anemia obtain gratifying results. In cases of either type, the presence of biliary calculi is an additional indication for operation. The remaining cases of jaundice are primarily the regurgitation type, and designation as to the medical or surgical nature of the illness is dependent on careful weighing of all the information available.

Summary

The utmost diligence should be exercised in the selection of the jaundiced patient for operation. Many lesions causing jaundice for which operation is unnecessary or strongly contraindicated are almost indistinguishable from those requiring operation. In all but the rarest cases, it should be possible to establish the diagnosis from the clinical impression together with information obtained from laboratory tests, including roentgenography and especially liver biopsy.

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The Brand Name is Here to Stay

I think I am safe in assuming that we do not want socialized medicine, or state medicine, any more than we want to do away with our American system of free enterprise. If this be true, then I can assure you that the brand name, or trademark, is here to stay. If you will stop to think about it a moment, you will recognize that our entire system of free enterprise is, in fact, based on brand names. Brand names enable the consumer to reward the product which is proved to be good—and the reward comes through repurchases of the product. If a product proves to be unsatisfactory, the consumer has the means of punishing it—by refusing to buy it again. And the means is, of course, his ability to identify the unworthy product through the trademark or brand name.—Theodore G. Klumpp, M. D., President, Winthrop Laboratories, to Massachusetts Medical Society.

Anticholinergic Drugs: Clinical Application And Evaluation of Endobenzyline Bromide*

• Clinical study of endobenzyline suggests that the production of hydrochloric acid is decreased and the progression of peptic ulcer inhibited.

D. C. BROWNE, M. D.
R. D. SPARKS, M. D.
New Orleans

ANTICHOLINERGIC drugs are utilized in the treatment of patients with peptic ulcer because of their ability to inhibit vagal stimulation of gastric secretions. The largest amounts of gastric fluid, hydrochloric acid and pepsin are produced by neural stimuli transmitted by the parasympathetic fibers of the vagus nerve. The cause for the initial destruction of mucosa in the formation of a peptic ulcer remains unknown although many theoretical explanations have been offered.[1]

The development and progression of peptic ulceration, however, does seem to be related to the presence of hydrochloric acid in gastric secretions. "Histamine-fast achlorhydria" [2] has not been demonstrated in a patient with peptic ulcer. Postmortem examination of more than 1700 cases of pernicious anemia failed to reveal acute or chronic peptic ulceration of gastrointestinal mucosa.[3, 4] The enzyme, pepsin, also is considered to be important in the ulcerative process. Pepsin can be demonstrated in all gastric juices which contain free acid.[5] The relative importance of the enzyme and the acid in the progression of peptic ulcer, therefore can not be separated easily; consequently, this discussion will be confined to consideration of hydrochloric acid production and vagal activity in gastric physiology and the effects of anticholinergic drugs on gastric secretions. In addition, a preliminary report on endobenzyline bromide, an anticholinergic agent, will be given.

Production of Gastric Secretion

The production of gastric secretions is divided into *interdigestive* and *digestive periods.*[6] Secretion of hydrochloric acid during the interdigestive period is intermittent. The specific stimuli are unknown but vagal impulses are believed to contribute.[6] Digestive secretion occurs in response to food and may be divided into three *phases: cephalic, gastric,* and *intestinal.* Each phase is arbitrarily named to indicate the region of the body from which the stimuli originate. The stimuli of sight, smell, taste and thought of food compose the *cephalic phase* and act from the region of the head through conditioned and unconditioned reflexes. The conditioned reflex secretion of gastric juice occurs only in the presence of desire for food and is dependent on the cerebral cortex for its operation. The unconditioned reflex secretion of gastric juices occurs following adequate stimulation of the taste nerves; it is independent of the cerebral cortex. The vagus nerves contain the sole efferent excitatory nerves for the *cephalic phase* of gastric secretion. The gastric juices of the gastric and intestinal phases of secretion depend upon the presence of secretagogue or gastric distention. These stimuli are not mediated by the vagus nerve. The volume of secretions of

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* Provided by Pitman-Moore Company as PC-1238; Trade name: Ulcyn.

Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 10, 1961.

From the Division of Gastroenterology, College of Medicine, Tulane University, Browne-McHardy Clinic, Touro Infirmary and Charity Hospital, New Orleans, Louisiana.

each of these phases or periods has been estimated to be: [6]

Interdigestive period:	30-60 ml./hr.
Digestive period:	
cephalic phase	150-450 ml./hr.
gastric phase	45-70 ml./hr.
intestinal phase	40-60 ml./hr.

Anticholinergic drugs can be expected to diminish the secretions during the interdigestive period at least moderately and during the cephalic phase of the digestive period considerably.

Vagal Activity

The motor division of the vagus nerve is a parasympathetic or cholinergic nerve. Agents which inhibit vagal motor impulses possess anticholinergic activity and therefore inhibit all cholinergic nerve endings to some degree.[7] Four types of nerve synapses mediated by acetylcholine are of importance: (1) the postganglionic nerve endings of all the parasympathetic nerves; (2) the postganglionic nerve endings of the sympathetic nerves to the sweat glands and some blood vessels; (3) the preganglionic nerve endings of the parasympathetic and sympathetic nerves; and (4) the motor end plates of voluntary muscles. The cholinergic blocking agents compete with acetylcholine for its receptor site preventing its access to neuro-effector cells. These compounds induce parasympathetic postganglionic blockade principally with the usual doses administered. In larger amounts they may exert a blocking action at the ganglionic synapses and also at the neuromuscular junctions.

Effects of Anticholinergic Drugs

The effects of anticholinergic drugs resemble those induced by atropine except for absence of stimulation of the central nervous system. These effects may be regarded as physiological evidences of potent anticholinergic activity; however, with the exception of the gastric antisecretory effect these manifestations are undesirable clinically. The discomforting side reactions include suppression of the functions of the sweat and salivary glands, paralysis of the ciliary muscle of the lens and the sphincter muscle of the iris, tachycardia, decreased intestinal motility and reduced tone of the urinary bladder.

Symptoms include dryness of the mouth and bad taste, blurring of the vision, palpitation, constipation, delay in urination, dryness of the skin, muscular weakness, drowsiness, and flushing of the face. Less frequent manifestations [8] include conjunctivitis secondary to decreased lacrimation and bromide rash from bromide-containing drugs. Paralytic ileus and intestinal atony with fecal impactions have been observed.[8] Parasympathetic antagonists appear to be undesirable in cardiospasm which is characterized neurogenically by sympathetic dominance. They are contraindicated also in the presence of gastric retention, incipient or established glaucoma, prostatic hypertrophy and perhaps in severe angina pectoris and/or coronary artery disease with arrhythmia.

The vagus nerves are not absolutely essential for the inhibitory effect of anticholinergic drugs on gastric secretions.[9] This is demonstrated by the decreased gastric secretion in dogs with gastric pouches and vagotomy when given anticholinergic drugs. There is no evidence at present that anticholinergic compounds directly influence hormonal or enzymic stimuli. Nevertheless, since the vagus nerve regulates or influences the responsiveness of the parietal cells to humoral and chemical stimuli, all phases of gastric secretion may be implicated.

Anticholinergic drugs may lower the volume of gastric secretions without influencing the concentration of hydrochloric acid. This effect may be useful therapeutically because the accompanying decrease in motility, by delaying gastric emptying, permits a longer period of interaction between antacid and acid. More complete neutralization of the reduced volume of secretions would result.

Effective Dosage

The effective oral dosages of anticholinergic drugs is usually much larger than the effective parenteral dose. Sufficient

quantities intramuscularly or intravenously are capable of inhibiting the large amounts of gastric secretions produced in response to histamine, insulin hypoglycemia and stressful clinical situations.[8] When given parenterally they may suppress the hypersecretion of patients with duodenal ulcer completely for several days despite the discomfort of prolonged intubation and the sight and smell of food. The activity of anticholinergic compounds after oral administration is usually brief and is interrupted readily. The differing effects with parenteral and oral routes of administration are unexplained. Presumably they are related to incomplete absorption of the active principle from the digestive tract by formation of insoluble complexes or by partial chemical inactivation.[8]

According to Kirsner, et al,[11] medical management of peptic gastric ulcers as well as duodenal ulcers depends upon the effective decrease or elimination of free acid from gastric contents. They also state that all benign ulcers would heal completely if free acid were abolished regardless of other possible etiologic factors.[11] Nevertheless, anticholinergic drugs should be administered only as adjuncts to conventional treatment for peptic ulcer. The duration of their administration varies from the period of healing only to periods of prolonged, continuous use with increased doses during times of emotional stress. The medication is taken before meal time to produce a maximum effect at the time of greatest production of gastric secretions from vagal stimulation. Larger doses are given at bedtime to produce a greater effect when the side effects will be less disturbing.

Establishment of effective dosage is difficult. The continuous inhibition of basal secretion as measured during therapy has been used. However, basal secretion is influenced readily and suppression of basal acidity does not guarantee a similar inhibition of the more profuse secretion characterizing the usual clinical stimuli.[8] Dosage determined by the development of minimal side effects, such as dryness of the mouth, has also been used as a guide.[10] However, individual variations in appearance of side effects, differences in gastric secretion, differences in pharmacological responsiveness, occurrence of severe side effects in the absence of secretory inhibition, and development of apparently similar symptoms during the use of placebos does limit the usefulness of this index.[8]

Present anticholinergic drugs do not produce a true "medical vagotomy." No single drug excels all others in gastric inhibitory properties, clinical tolerance and therapeutic value in peptic ulcer.[8] The occasional dissociation of antisecretory effect and side action suggests that development of a compound acting selectively upon the gastric secretory apparatus without influencing other sites of cholinergic activity may be possible.

Preliminary evaluations of antisecretory drugs in animals are necessary. These studies may suggest a specific activity of a drug with minimal side effects. The responses are not directly transferable to man either qualitatively or quantitatively.[8] Therefore each new agent must be examined for desirable and undesirable effect in human subjects following parenteral and oral administration.

Endobenzyline Bromide

Endobenzyline bromide (PC 1238) is a benzyl-mandelic acid ester, a new anticholinergic agent of the quaternary ammonium group.[12] It was slightly more potent than atropine against smooth muscle spasm produced by acetylcholine *in vitro*. The inhibition of gastric secretion in rats was comparable to that of atropine at the same dosages. Similar doses of these two drugs given to dogs showed that endobenzyline inhibited the production of salivary secretion no more than did atropine. The parasympathetic effect on the pupils, heart and circulation was very similar in both drugs. It appeared to be a cholinergic blocking agent working at post-ganglionic endings of the parasympathetic nerous system. Dogs were given 100, 200 and 400 mg./Kg. of endobenzyline orally;

all animals manifested toxic signs similar to those seen with atropine. No deaths were observed, although mydriasis was still present twenty-four hours later.

Clinical trials have reported the use of the drug in doses of 5 to 10 mg. t.i.d. orally or 2 mg. parenterally.[12] Dryness of the mouth occurred frequently with doses of 10 mg. t.i.d. A few patients received 30 mg. of endobenzyline daily for several weeks without evidence of toxicity.

A clinical evaluation of endobenzyline bromide was undertaken to estimate the value of this drug as an anticholinergic agent in the treatment of patients with peptic ulcer. The effect on the production of gastric secretions was tested in preliminary studies. A group of patients was observed for evidence of decreased symptoms of peptic ulcer and occurence of side effects while receiving the drug.

The volume and free acid concentration of gastric secretions were studied during a ten hour nighttime period in 5 patients with active duodenal ulcer. Gastric intubation was performed at 9:00 p.m. in each subject and secretions were collected as hourly fractions by constant mechanical suction. No anti-secretory agent was given before or during the control collection period. At the time of the test period, 4 of the 5 subjects received endobenzyline, 4 mg., by intramuscular administration at 9:00 p.m. and the fifth subject received the same dosage at 10:00 p.m. One subject (patient E) received the drug again at 2:00 a.m. after he complained of epigastric discomfort. The estimations of the free acid concentrations are demonstrated in figure 1.

A marked decrease in the concentration of free acid is demonstrated within one hour after the parenteral administration of the drug. The effect appears to persist for a minimum of two to three hours after the initial indication of antisecretory activity. The total volume of gastric secretions collected during each ten hour period is indicated to the right of the graph of free acid concentrations. The mean value for the control period with these 5 patients was 683 ml. The mean volume of secretions for these same patients during the test period was 255 ml.

Another group of 6 patients was observed for the effect of oral administration of the drug on daytime, basal secretion of gastric juices. Only one patient was suspected of having a peptic ulcer. Each subject was intubated on 2 consecutive days after an overnight fast and hourly samples of secretions obtained for estimation of free acid concentration. No antisecretory drugs were given in the twenty-four hours prior to or during the control collection period. Endobenzyline was given (10 mg., orally) immediately after gastric intubation was accomplished for the test period. The concentrations of free acid in each specimen are represented in figure 2.

One subject produced secretions containing very high concentrations of acid and because of the small number of subjects,

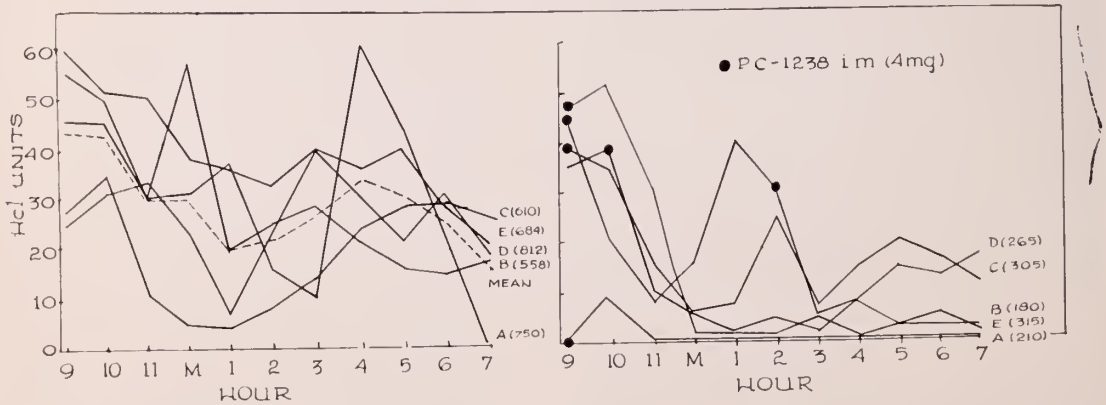


Figure 1.—Ten hour night secretion studies. Left graph, control cases. Right graph, same cases with 4 mg. Endobenzyline.

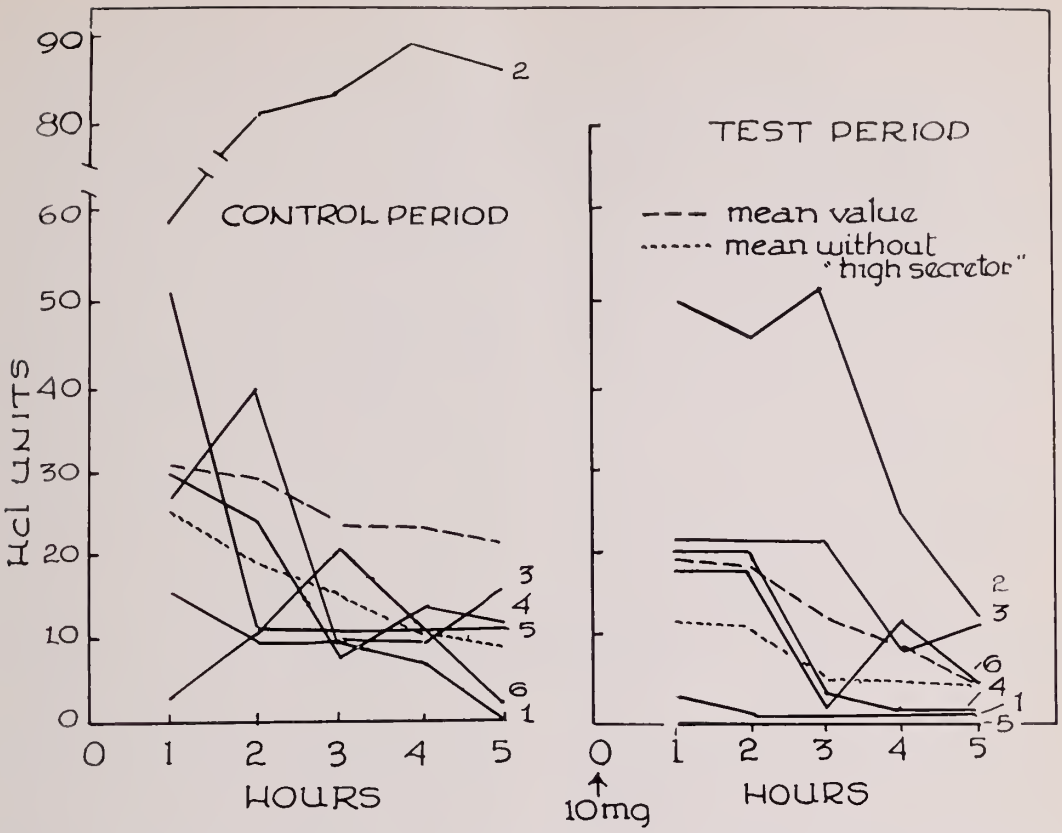


Figure 2.—Daytime basal secretion study. Left graph, five hour control period. Right graph, same patients after Endobenzyline, 10 mg. oral. Note one high secretor (Case No. 2) yet same pattern of response to drug.

influenced mean values a great deal. Exclusion of this individual from the group reveals mean values lower than but nearly parallel to the mean values of the entire group. It is noted that this subject did respond similarly to other subjects during the test period. The effect of oral administration of the drug began within one to two hours and continued through the five hour period.

A third group of patients with peptic ulcers was studied for the effects of ingestion of an Ewald test meal upon gastric secretions. Each patient was intubated and the test meal given within fifteen to thirty min. Half-hourly samples of gastric contents were obtained to estimate free acid content. Tests were performed on two consecutive days. The first observation was made on subjects during a period when no antisecretory agent was administered in the twenty-four hours before or the five hours during the test. On the second day, 4 of the same subjects were given endobenzyline, 5 mg., orally and 1 subject 4 mg. intramuscularly, as soon as the nasogastric tube was in place.

The mean values for free acid concentration of the control and test periods reveal an initial effect of endobenzyline in the one hour sample and marked effect in the 1½ hour sample; the suppression continues through the remainder of the five hours of observation.

A fourth group of 39 patients having peptic ulcers was given endobenzyline orally for at least thirty days as part of their ulcer regimen. Three had gastric ulcer, 34 had duodenal ulcers, and 2 had marginal (stomal) ulcers. The results of treatment were graded after thirty days of therapy. The response was classified as *poor* if no relief of symptoms was ob-

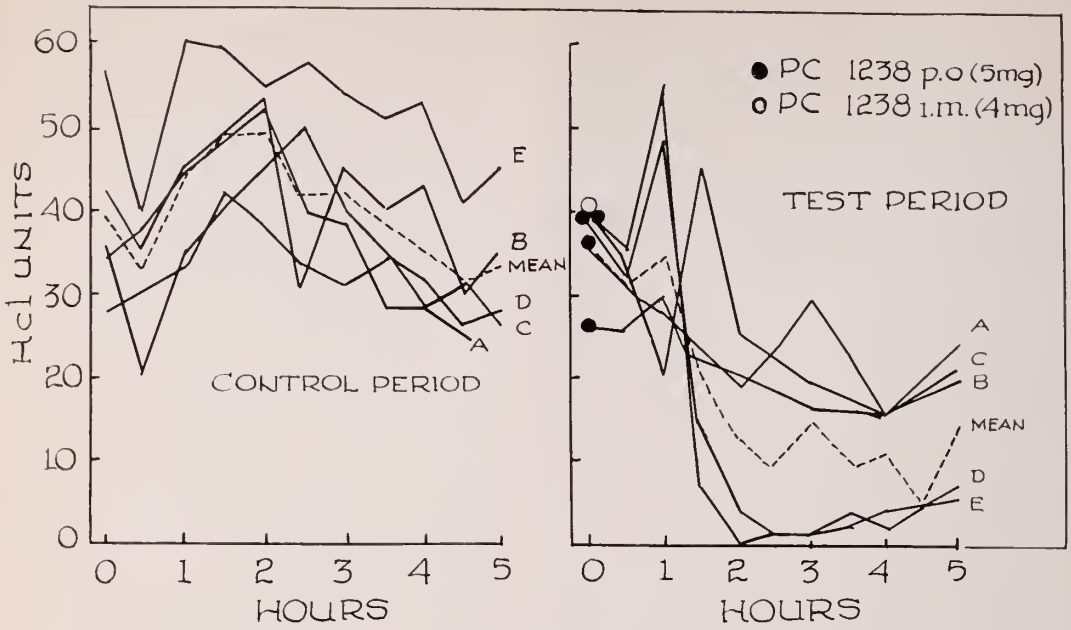


Figure 3.—Five hour secretion studies with Ewald test meal; left graph control; right graph, same cases with Endobenzyline, 5 mg., oral. (Mean values).

tained and the drug discontinued; *fair* if the symptoms were incompletely relieved and readjustment of the regimen was done frequently but the patient was able to resume his usual employment; and *good* if symptoms were relieved, medication dosage was stable and no side effects were observed. The results with 5 patients were poor, 5 were fair, and 29 were good.

TABLE 1
CLINICAL RESPONSE

	Cases	Poor	Fair	Good
Gastric ulcers	3	0	0	3
Duodenal ulcers	34	4	4	26
Marginal ulcers	2	1	1	0
Totals	39	5	5	29

A standard group of laboratory studies was done for all patients in this group: hemoglobin concentration, packed cell volume, total and differential white blood cell counts, urinalysis, with PSP, NPN or BUN, a test of liver function (usually BSP retention) and Ewald test meal for stimulation of gastric secretions. Contrast roentgenographic studies of the gastrointestinal tract were performed initially and repeated only for specific indications. At the termination of the study period, the standard group of studies was repeated with the exception of the Ewald meal stimulation. There was no unusual alteration noted in these standard studies.

This group of 39 patients with peptic ulcer was observed also for the occurrence of side effects from administration of the drug during a period of four to twelve weeks. Dryness of the mouth was noted frequently when doses of 10 mg. t.i.d. or greater were used initially. Thereafter, patients were instructed to take 20 mg. of the drug a day or less. Dryness of the mouth occurred in 4 patients in this group of 39 patients. Another patient noted blurred vision for the first four days of treatment only. One other complained of flushing of the face on four occasions. In no instance was it necessary to discontinue medication because of side effects. Reduction of the dosage relieved persistent side effects. Dermatitis was not observed in these patients.

Discussion

The preliminary studies of endobenzyline bromide in a small number of patients suggested that 4 mg. given intramuscularly and 10 mg. given orally were capable of decreasing the concentration of hydrochloric acid during basal states of gastric

secretion. The dosage of 5 mg. orally seemed to be effective in supressing free acid production during the cephalic phase of the digestive period. Further studies of this type are necessary for a complete evaluation. If these preliminary findings are supported, the drug will be unusual because of the similarity of the effective oral and parenteral dosages.

The dosages of endobenzyline bromide used in this evaluation were approximately ten times greater than the amount of atropine ordinarily administered for reduction of gastric, bronchial or salivary secretions. No subject complained of dry mouth following acute administration of endobenzyline and only 4 of 39 patients receiving the drug for periods of thirty days or more noted zerostomia. There is evidence that the dosage used is capable of reducing the volume and free acid concentration of nighttime, basal gastric secretions. This would suggest that endobenzyline has a more specific gastric antisecretory effect than atropine and may prove to be more beneficial in the treatment of peptic ulcer than other currently available anticholinergic drugs.

The incorporation of endobenzyline in the regimen of treatment for peptic ulcer in 39 patients in this series has been satisfactory in dosages of 20 mg. a day. The results compare favorably to those obtained with other anticholinergic agents as part of the treatment for peptic ulcer used by one of us (D.C.B.) in previous studies.[13]

Summary

Hydrochloric acid in gastric secretions seems necessary for the progression of peptic ulceration. Diminished acid concentration would appear beneficial to the healing of peptic ulcers. Endobenzyline bromide has diminished the production of hydrochloric acid in animals. This clinical study suggests a similar effect in man. Undesirable side effects have not prevented the use of oral dosages demonstrated capable of at least partially inhibiting the secretions formed during the cephalic phase of the digestive period. Parenteral dosages are well tolerated and seem capable of effectively diminishing gastric secretions. Prolonged oral administration of the drug has not caused allergic or toxic effects in the patients studied. Further study and use of this drug as an anticholinergic agent with ability to suppress gastric secretions seem warranted.

Acknowledgements

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Discussion

Dr. Doyle R. Hamilton (Monroe): Dr. Browne has presented an extremely clear picture of the peptic ulcer problem. I enjoyed being reminded of basic physiology which divides the phases of digestive secretion into three: cephalic, gastric, and intestinal. As we have just seen, the cephalic phase produces the greatest amount of free hydrochloric acid. It is upon this phase that anticholinergics have their effect. Many processes which are in reality quite complex can be explained in such a manner as we have just heard so that they are easily understood. We needed to be reminded that the management of peptic, gastric, and duodenal ulcers depends upon the effective decrease or elimination of free acid from the gastric contents. It is good to know that all

benign ulcers heal completely if free acid is abolished, regardless of the etiologic causes. Had we forgotten that therapy before meals is needed for maximal effect and that larger doses are given at bedtime to minimize the effects of the side effects?

The anticholinergic drugs as a group are the biggest boom to the treatment of peptic ulcers in the past ten years. How many ruptured peptic ulcers are you seeing now compared to ten years ago? Certainly anticholinergic drugs have lessened to a great extent the severe complications of peptic ulcers.

May I emphasize the need for extreme caution in the use of anticholinergic drugs in the presence of active bleeding. As we have just seen, not only does this group of drugs decrease the secretion of free hydrochloric acid, but they cause an atony of the stomach musculature. Copious bleeding could thus occur unrecognized much more easily.

Is such a study as the one we have just heard justified? Do we need another anticholinergic when we already have so many? In my North Louisiana general practice, I have not found the ideal anticholinergic medication, just as you have not. This is exemplified by the fact that I constantly change my routine. My own best results have come from the combined use of Probanthine, Aludrox, and a bland diet, along with the abstinence from tobacco and alcohol.

Nothing can be more annoying to the patient than an active peptic ulcer. It behooves us to continue our search for the ideal anticholinergic. Perhaps endobenzyline bromide is the answer we have been looking for. Certainly such studies as you have just heard are justified as we continue our search.

Musings of A Drug Manufacturer

Despite all the seeming inefficiencies of free competition, I would rather be deluged with more medicinal preparations than I know how to use than be forced to sit idle at the bedside of a patient doing nothing because there are not enough drugs to save lives, at the very least, to bring comfort to my patients. I would rather be accused of trying too hard to market my useful products than to default on marketing and, thus, to lose sales and thereby increase costs. I would rather be stacked up over an airfield for two hours in a 1961 jet than to have the sky all to myself in something like the Wright Brothers' original flying machine. I prefer to suffer the pangs of perplexity in having countless alternatives in the purchase of a new car than to have no choice at all.—Theodore G. Klumpp, M. D., President, Winthrop Laboratories, in **New York Medicine.**

Public Versus Private Medical Care: Two Decades of Debate*

• A plea for private medical care; the gradual encroachment by government controlled medicine.

ROWLAND B. KENNEDY †
Jackson, Mississippi

FOR twenty years, the American system of medical care has been on trial. The charges are largely trumped up, the indictment is imperfect, and the prosecution often violates the rules of evidence. Medicine, its adversaries say, is guilty of socioeconomic felonies but it is more likely that only a few misdemeanors may truthfully be laid at physicians' doors.

Basic Issue

The first thing doctors ought to understand, I feel, is that their adversaries have been successful in posing a basic issue and a basic question, both of which are serious and demanding. Moreover, this clever group has been successful in securing public validation of the question if not, in fact, the issue.

Simply stated, the question is this: "Under what circumstances shall medical care be provided?"

The issue is more insidious: "What sort of economic system shall the United States have?"

In two decades, the campaign has progressed from more or less isolated concepts among idealists, liberal politicians, and welfare state proponents right smack into the halls of Congress and the respected environs of the White House. It can't be ignored because it simply will not wither and fade away. Most of us understand that if the issue is resolved against the capitalistic-republican federal fabric—and there's been notable movement in that direction—then the question is ridiculously academic.

Economic Patterns of Medicine

The second thing doctors ought to understand is that whatever woes beset them, their patients, and traditional patterns of medical practice are first, now, and always economic. Goldwater and Douglas, Reuther and Annis, Brown and Blasingame can all find themselves in basic accord on the scientific success of American medicine. Wherever competence, professional attainment, or quality of care are questioned, the finger usually points to individuals and not toward the profession as a whole. Although countless millions of words have been written and spoken about the cost of medical care, almost everybody comes to general agreement in one way or another that it does cost and that it must be paid for. Hence, the debate is over the means—not the end so universally sought.

Who Will Do THE Paying

The third thing medicine must understand and, indeed, accept is that it's no longer a question of how the bill shall be paid. *It's only a question of who will do the paying.*

Medicine can and must win but it will not be the sort of victory some visualize. This is for sure: American medicine can't capture the minds and support of a sophisticated people if it elects to drive down the super highway of the 60's in a Stanley Steamer. But I am unable to conclude that this is the remotest of eventualities because where there are differences among that vast majority of con-

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* Read before the Regular Meeting of the Rapides Parish Medical Society, Alexandria, Louisiana, September 5, 1961.

† Executive Secretary, Mississippi State Medical Association, Jackson, Mississippi.

servatively oriented doctors, the debate is over *how*, not *what*.

History of Gradual Steps

The facts of the case are equally important as and less debatable than the broad abstractions. The origin of medicine's continuing crisis can be pinpointed: August 14, 1935, the date that the Social Security Act became law of the land. If the original enactment was not a deliberate, purposeful pattern for what is seen today in health care legislation, then the least that may be said is that it was a vehicle of fortuitous convenience for such stalwarts as Cohen, Reuther, Forand, King, Anderson, and Ribicoff.

If more physicians knew and understood the genesis of Forand and King-type legislation, medicine's position might be more secure than it is today. The original Social Security statute provided, among other things, for federal grants to the states for use in making payments to these classes of indigent persons: (1) aid to the blind, (2) aid to the permanently and totally disabled, (3) aid to dependent and crippled children, and (4) old age assistance.

In 1935, many felt that the state governments, then in the depths of depression, could not finance adequate public assistance for these groups. It is however, important to understand and appreciate that these programs were intended to be — and remain today — essentially state programs. *This concept is the basis for medicine's almost universal support of the recently enacted Kerr-Mills bill.* Although these titles have been amended in nearly every election year since 1936, none may be implemented in any state without the consent of the legislature and the appropriation of state matching funds.

From 1935 until 1950, money for medical care was paid directly to public assistance recipients as part of their gross cash benefits and not earmarked as such. In 1950, the Congress amended the Social Security Act to permit states to make payments directly to the vendors of health care rather than to the recipients. At that time, about a third of the states began to pay a portion of public assistance funds for medical care directly to physicians and hospitals.

In 1956, Congress again revised the method of payment by establishing a separate federal-state matching program for medical care payments. At this point, states had a choice of retaining the vendor payment system or accepting the separate matching program for receiving federal dollars for medical care. This phase was brief because in 1958, amendments to the Social Security Act governing these payments were again revised. The separate matching program was discontinued and the determination of the method of payment for medical care to public assistance recipients was returned to the states.

This brief chronology of legislative evolution is really an oversimplification of this phase of the Social Security Act. The easy expansion of the federal benefit system has been an election year spectacular. Perhaps one reason for this—apart from the vote bait aspect—is because the plan has been devised to make the tax burden fall lightly on the present generation of workers and voters, thereby shifting it to future generations who will have to do something about the mounting bill.

When the first Forand bill was introduced in 1957, it contained nothing not previously included in the old Wagner-Murray-Dingell proposal. But in four years, the only significantly new enactment in this entire area has been the Kerr-Mills program, a distinct victory for medicine. If this were the end of the story, then a discussion of this area of socioeconomics would be confined to a matter of historical interest. Unhappily, this simply isn't so.

It is difficult and even speculative to try to assess the respective positions of advantage from which proponents of public and private systems of medical care now proceed. To me, it is foolish to compare anybody's 1935 goals and aspirations with those of 1961. Both the providers and recipients of health care have experi-

enced considerable change in that quarter of a century.

The greatest successes enjoyed by proponents of public medical care have been in the areas of progressive legislation and the obtaining important forums for espousing their cause. Obviously, their bite isn't as good as their bark or every physician might now be directly or indirectly an employee of the federal government. On the other hand, they demonstrate infinite patience and persistence. Recognizing that time doesn't work against them, they are willing compromisers because they are astute enough to know that compromise on any proposal they make is in some degree a victory. They are, therefore, potentially susceptible to the same failing as Napoleon: He was only licked once but that particular engagement was at Waterloo.

The proponents of private care and basically voluntary means for purveying it have fought delaying actions. Some of our perceptive critics accuse medicine of doing something only when its back is to the wall but this lacks a lot of being the whole fabric of the truth. The ready proof is in medicine's scientific achievements, something too often deemphasized. No bills were pending before the Congress when Halstead jumped surgery ahead fifty years through his brilliant work. No hostile administration baited the development of antibiotics and in this very decade, the poliomyelitis vaccines were developed mostly through private, voluntary means while the economic debate grew hotter.

In the past four years, federal care proponents lost two Forand bills and are stalled temporarily on the King-Anderson proposal. Social Security expansion with respect to cash benefits and the circumstances under which these may be paid, important as they may be, are peanuts in comparison to the Forand-King principle so desperately sought.

Then there is the positive, almost overwhelming force of voluntary prepayment and private health insurance. While the debate rages, acquisition of this basic-to-inclusive health service protection has grown with unbelievable momentum. Perhaps I'm naive to say it but I feel that the public at large realizes that monopoly, whether public or private, is inherently undesirable and that's exactly what Social Security medical care is. And for those who advocate federal subsidy of our private prepayment and insurance programs with their unctuous assurances of no interference, there is the universally understood answer that he who pays the piper calls the tune.

All this is to say that if medicine were destined to lose this fight finally, conclusively, and irrevocably, then it would have lost before now. But much depends upon what doctors and medical organizations do from here on in. Acceleration of medicine's positive programs of guaranteed service in the present climate under the leadership of the American Medical Association and the several state societies will only result in your moving from positions of progressively greater strength. But in so doing, medicine can't afford to try to turn back the clock.

Need for Adapting to Social and Economic Change

If conservative people have a weakness, then it's the general inability to recognize, accept, and adapt to social and economic change without compromise of their basic beliefs. I believe that it's one thing to be conservative and another to be bullheaded. Perhaps many a good cause has been lost for want of this insight. And this is the key to the fourth thing I believe doctors must understand.

Apart from theology, ethics, logic, and other *a priori* based areas, almost nothing is static. And this seems to obtain especially to demography, sociology, and economics—to say nothing of politics. There's an old saw which proclaims that " . . . the only changeless thing is change."

It is not easy to accept but certain patterns of medical practice have emerged on the American scene and they possess all the trappings and earmarks of permanency. We — meaning a majority of

physicians in medical organization—may not like group practice, more usually called closed panels, we may despair of union-sponsored health programs, we may find much to criticize in federal medical services apart from those under Social Security, but each looks as though it's here to stay. You and I know that the strongest of the conservatives advocate sudden, total destruction of these programs while the other end of spectrum preaches co-existence. I would not attempt to resolve this question even if I were capable of doing it but I can suggest a reasonable approach for reasonable men.

If these programs of care incorporate quality, then let's concede the point. If these approaches toward satisfying health care demands are actually what the recipients want, let's acknowledge existence of the fact. If we can document inherent undesirability, lack of quality, or misrepresentation in their genesis, then we have the obligation to speak out.

We must face socioeconomic realities and see things as they actually are rather than as we might wish to see them. Once this is accomplished, then we are in far better position to do something about our own convictions which will then amount to a great deal more than the mere imposition of our wishes upon others.

I believe that privately purveyed medical care is the best medical care and I believe that medicine need make no apologies for the *status quo* 1961. But I also believe that nothing is perfect and that medicine approaches a more reliable science, a more exact art, and realization of its nobility of purpose when it seeks self-improvement. In this context, I say compete with the opposition and compete vigorously. That's exactly what's been done in programs of care for the aging, in voluntary prepayment and private insurance, in the Kerr-Mills and other programs of care for the indigent, and everywhere that the better choice has been found.



How to Kill Incentive in Drug Research

Effect of compulsory generic name use on the ethical drug makers would be profound, say industry spokesmen. Gone would be the incentive to make the highest possible quality products; minimum standards would suffice. The incentive to improve existing drugs would disappear. There would be little incentive to develop dosage forms which could benefit relatively few people, and there would be little incentive to distribute a product to areas where statistics show sales would be relatively low. The most expensive drug is the one you can't get when you need it. . . . And incentive and money to do research toward new drugs to lick the as yet incurable diseases would be lacking. The question then arises: Where would tomorrow's drugs come from?—**Chemical Engineering News**, June 13, 1960.

Pharmaco-Motivation of the Geriatric Patient: A Preliminary Report on Hexacyclonate*

• An investigation of the effect of a new drug in regard to mentation and affect in geriatric patients.

BENJAMIN O. MORRISON, M. D.†
New Orleans

AN inescapable phenomenon of later life is a general deterioration of mentation and affect. The rate at which this occurs depends on many factors. Thus, declining income, loss of family and lifelong friends, serious illness, and the loss of motivating interests are only a few of the oppressing forces which can induce a state of general apathy and despair in many people, forcing them to consider themselves a "burden" to their families, friends and society at large.

The treatment of these subjects has become a pressing problem of modern-day medicine—one which can only increase in the future. Until the present, little more than "occupational therapy" could be accorded patients of this type because a consistently effective, non-toxic drug which would provide the initial motivating "spark" has been lacking. Coincident with the recent wave of social and political concern for this segment of the population, however, attempts have been made to discover new drugs which could be used adjunctively with other forms of treatment, particularly occupational and physical therapy. One such drug hexacyclonate, was offered to us over a year ago for clinical evaluation.

Method and Material

The 16 women and 34 men who took part in this clinical trial were treated on the medical service of a general and private hospital, and ranged in age from 39 to 91 years; 65% were 60 years old or older. All the patients had been hospitalized because of severe organic diseases and, because of this, provided a stringent test of the drug's effectiveness. The most prevalent diagnoses were cerebral arteriosclerosis, chronic brain syndromes of various etiology, congestive heart failure, and carcinoma. As part of the symptom complex associated with this variety of primary disorders, all the patients exhibited varying degrees of decreased or abnormal physical and mental activity. The most characteristic symptom was apathy or indifference toward normal environmental and self-interests (46 patients) ; anorexia was observed in 41 patients. Additional signs and symptoms frequently encountered included lethargy, impaired memory, weakness and/or fatigue, insomnia, and apprehension.

So that we could assess any ill effects the drug might produce, all the patients underwent physical examinations and a battery of laboratory tests which included complete blood counts, urinalyses, and liver function tests prior to treatment. Additional laboratory tests were done as required. Hexacyclonate was administered orally in initial daily doses of 75 (25 mg. t.i.d.) and 100 (50 mg. b.i.d.) milligrams. These doses were increased in most patients to determine the level at which maximum improvement occurred or incapacitating side effects intervened. The average effective daily dose proved to be 150 mg. (50 mg. t.i.d.), although several patients received daily doses as high as 300 mg. The maximum duration of treatment was 50 days; the average, 21 days.

Changes in the patients' physical and

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emotional status were recorded daily, and were summarized at the conclusion of the evaluation. Because of the extensive organic pathologies in the patients, distinguishing the degree of overall improvement was often difficult and, to avoid introducing errors of interpretation, overall improvement was simply scored as "Improved" or "Unimproved".

Results

Improvement in physical and emotional status is presented (Table I) in terms of the anatomical system involved in the patients' primary diagnosis. As will be noted, 39 (78%) patients improved during treatment with hexacyclonate. The most obvious symptomatic improvement occurred in mental alertness and desire to cooperate with the nursing and medical staffs. Almost as obvious was the improvement in appetite and increased strength. Depending on the patient's pretreatment physical and emotional status, individualized improvement was noted as increased environmental and self-interests, increased responsiveness to questioning, increased physical activity such as the desire to sit up or get out of bed, and less apprehension. Although minor improvements were noted in the sleeping pattern of some patients, this criterion was difficult to assess since most of the patients were bedfast and dozed intermittently during the day. The following case histories are typical of the responses seen in patients:

Case History No. 1.—G.D., male 68 years of age. Physical examination on admission resulted in a primary diagnosis of cerebral arteriosclerosis with progressive deterioration, and a secondary diagnosis of hypertensive cardiovascular disease. Blood pressure obtained in a sitting position was 170/110. Except for a moderately elevated blood urea nitrogen (31 mg. %) results of all laboratory tests were within normal ranges. The patient complained of being "nervous", tired, and unable to sleep or eat. His response to questioning was indicative of a decreased ability to concentrate. He was generally apathetic or indifferent throughout the admitting examination and interview. While under treatment in the out-patient department, he had received reserpine, methylphenidate (Ritalin), and vitamin therapy, but had experienced little symptomatic improvement. The initial dosage of hexacyclonate, 25 mg. q.i.d., was continued for 8 days, during which time the patient's appetite improved considerably. He appeared to sleep better at night, but his emotional status remained essentially unchanged. The daily dose was increased to 150 mg. (50 mg. t.i.d.) and continued at this level for an additional 8 days. While receiving this dose, the patient complained less of being tired and nervous, his appetite continued to improve, and there was a decided improvement in his mentation and affect. In an effort to obtain greater improvement, the daily dose was increased to 200 mg. (50 mg. q.i.d.) and continued for another 15 days. No additional improvement was noted, however. Blood pressure readings were made throughout treatment, but failed to show any significant changes. The slight decrease that was noted was attributed to bed rest. Laboratory tests were repeated after 31 days of treatment with hexacyclonate, but failed to show any abnormalities; the previously elevated blood urea nitrogen had returned to normal (19 mg. %). The patient complained of occasional dizziness during the first week while receiving a daily dose of 100 mg., but no further complaints were made during the remainder of treatment. The patient was considered "Improved".

TABLE I
RESPONSE TO TREATMENT WITH HEXACYCLONATE

System Primary Disorder Related to	No. of Patients Treated	Results	
		Improved	Unimproved
Cardiovascular	10	8	2
Respiratory	7	7	0
Gastrointestinal	2	2	0
Genitourinary	1	1	0
Hematopoietic	2	2	0
Neurological	26	18	8
Miscellaneous	2	1	1
Totals	50	39(78%)	11(22%)

Case History No. 2.—J.B., male, 79 years of age. This patient was hospitalized following a physical examination which revealed a chronic brain syndrome due to alcohol intoxication, pyelonephritis, and a probable gastric carcinoma. Laboratory tests were within normal ranges with the exception of a slightly elevated fasting blood sugar. The patient had not been treated previously. Except for mild complaints about not being able to sleep or eat, he elicited no additional symptoms during the interview. He apparently had little interest in his surroundings or himself, as evidenced by his unkempt appearance. In addition to intramuscular vitamin therapy and antibiotics, hexacyclonate was instituted in a daily dose of 100 mg. When no improvement had occurred after 7 days' treatment, the daily dose was increased to 150 mg. and continued for 8 days. During this time his appetite improved somewhat, but no other changes were apparent.

The daily dose was increased to 200 mg. and administered for 14 days. During the first few days the patient's appetite remained improved and by this time he had gained a total of 5 pounds. After a week on this daily dose, however, he lost his appetite, began losing weight and still failed to show an improvement in mental outlook or mood. In a final effort to bring about emotional improvement, the daily dose was increased to 300 mg., but no improvement was noted. Laboratory tests were repeated at this time, and were found to be within normal limits, including the fasting blood sugar. The patient did not complain of side effects, even when the dose was increased to 300 mg. a day. The patient was considered "Unimproved".

Clinically demonstrable improvement occurred, on the average, between seven and fourteen days after hexacyclonate had been initiated. Based on this observation, it would appear that its effectiveness may depend on a minimum effective concentration in the tissues. Although we do not have any evidence to support (or refute) this hypothesis, there seem to be other and perhaps more probable, explanations for this effect. For example, the fact that the overwhelming majority of patients included in the evaluation were quite advanced in age, possessed numerous and often extensive organic disorders, and had been ill for prolonged periods could have accounted for the delayed onset of clinical effects. Another explanation for this might involve an accumulation in the body of some biochemical product of the drug, similar to that which has been postulated as the basis for the activity of monoamine oxidase (MAO) inhibitors. Whether the action of hexacyclonate is related to its biochemical action is not yet known. If it is, however, the biochemistry does not involve monoamine oxidase inhibition because the drug does not possess these properties. Finally, a very possible explanation for this delayed effect could involve the doses that were used in initiating therapy. As mentioned previously, it was our opinion that the most effective daily dose was 150 mg. In view of the lack of serious or even mild, annoying side effects of hexacyclonate, it would be interesting to determine the onset of action following the use of initial daily doses of 150 mg. Further investigation along these lines should, we feel, be initiated.

Results of repeated laboratory tests failed to show any depression in bone marrow or damage to the hepato-renal system, even in several patients with extensive, terminal pathologies. Side effects were observed or reported in 6 (12%) patients and included sodium ion retention (2), hyperactive nerve reflexes (2), and dizziness and hallucinations with disorientation (1 each). Except for the two patients who experienced hyperactive nerve reflexes, the influence of the drug in producing the remaining side effects was questionable because of the existing organic disorders in the patients experiencing them.

Comment

The factors should be kept in mind when assessing the results of this evaluation. First, we purposely selected chronically ill, severely deteriorated patients in order to provide the drug with as stringent a challenge as possible. This undoubtedly decreased the drug's effectiveness. Even so, however, 78% improvement in patients as difficult as these, is to say the least, encouraging. Second and perhaps more important, hexacyclonate was practically the only therapy that the patients received to improve their mental outlook. This factor was not one of design, but one of necessity since the hospitals in which the evaluation was conducted were primarily concerned with therapeutic and surgical care rather than rehabilitative programs. Because of this, occupational and other forms of group therapy were lacking, in the main. Had hexacyclonate been used in conjunction with these additional therapies, results would have, I am sure, been more indicative of the drug's potential utility.

Summary

Hexacyclonate, a new central nervous system alerting agent, was evaluated in 50 apathetic, unresponsive, sedentary patients, the majority of whom were chron-

ically ill and severely deteriorated. The drug was administered without the benefit of adjunctive group therapies, such as occupational therapy and recreational therapy. Thirty-nine (78%) of the patients showed improvement which was characterized by increased mental alertness, desire to cooperate with nursing and medical staffs, appetite and strength. The drug seemed to be almost specific in lessening apathy. Results of laboratory tests failed to show depression of hematopoietic activity or damage to the hepato-renal system. Mild side effects were observed or reported in 6 patients, but the role of the drug in producing them in 4 patients was questionable. Based on these results, hexacyclonate is a clinically useful medication and appears to have its greatest utility in apathetic, geriatric patients whose mental and physical activity has been slowed due to changes in the brain brought on by senility.

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Thanks—But What Do You Have Today?

Americans traditionally take the past for granted and live with a foot in the future. This is a sign of health in a country that is still growing . . . People are generally pleased and relieved that drugs have been found to cure pneumonia, tuberculosis, scores of infectious diseases, and to improve many other conditions . . . (Yet) the more we achieve the more we are expected to achieve. "Thanks a lot for cortisone, but what did you do for me **today**?" To some this attitude may seem cruelly ungrateful, but basically it serves as a useful stimulant to progress. The day America finds time to compose hymns of thanksgiving to producers will be the day we watch the funeral of progress.—Austin Smith, M. D., Pharmaceutical Manufacturers Association president, at PMA regional meeting.

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Editorial

"AM PAC"

American Medical Political Action Committee

"Macbeth: If we should fail,—
Lady Macbeth: We fail!
But screw your courage to the sticking-place,
And we'll not fail."

—Shakespeare—

The situation facing American medicine was never more serious than now. The plans to force socialized medicine on the American public are reaching a crucial stage. The attempt to erect a pilot structure around which the whole administrative bureau of socialized medicine might be formed will be acted upon this year. What is best for American medicine and for our patients is going to be determined, not by the decision of doctors and scientists but by politicians looking for votes. The historical background of this situation is familiar to many.

A small group met across the border in Canada in the late 1920's. The plan to establish socialism in the United States was formulated. Medicine was to be taken over first. In a succession of friendly national administrations small, and then bigger bills were introduced into Congress. These were to soften up the opposition. In 1948, a frontal attack was made in Congress by the victorious Democratic party under Truman. This attempt failed because the American Medical Association in its educational campaign convinced the articulate public of the lasting evils of any form of socialized medicine.

The proponents of this phase of socialism were dislocated in the application of their time table but not sufficiently discouraged. They announced and proceeded to secure favorable action on little bits of

legislation which acted as bait. This was fed to the gullible public, which the socialists now seek to impale on the final hook. The device for which the Socialistic elements in both parties, principally the Democratic, are presenting for acceptance is the King-Anderson bill (H.R. 4222).

As many physicians know, this Bill will provide hospitalization for about 17 million actual or potential social security beneficiaries. The expense of such a large undertaking will be met by a compulsory additional tax on all employers and employees. It is admitted by its proponents that it is just the beginning. If the disaster of its enactment should fall upon the country, it would merely be a matter of political jockeying from one of our socialist parties to the other, to increase its scope rapidly. The result would be that within one or two decades universal socialized medicine would become an established fact.

To illustrate the gravity of this situation the following statement from the author of the bill, Wilbur Cohen, who is the present assistant secretary of HEW is most illuminating. Senator Carl Curtis asked this question, "If compulsory health insurance was extended to everybody, the total payroll tax would be up to 19 or 20 per cent. If it was a 20 per cent rate the self-employed rate would be 15 per cent. With a $9,000 taxable wage base, the maximum tax on the employee and employer would be $900 each; and the maximum tax on a self-employed person would be $1350, if we do what you advocated today plus what you advocated in 1946."

"Do you feel that as much of that man's earnings of $9000 as a Federal tax source should be devoted to this one single program of social security as is available to help finance all other activities—the functions of the Government, the paying of the national debt, and the defense of our country?"

Mr. Cohen's reply, "Yes, I do, Senator."

This could only mean that the social planners look forward to an expansion of this phase of the social security program to take in the whole field of medicine and ultimately make socialistic the entire national economy.

To meet situations of this type, but not as serious as this, the physicians of the nation through organized medicine, have made worthy contributions toward good government and towards what is best for the nation's health, for more than a century. In recent years facts, logic, and persuasion are having a diminishing effect in guiding the actions of our lawmakers. This has followed the decision of the labor leaders and those political factors who are socialistically inclined to go beyond the party platform. The pattern is to support or reject a candidate on the basis of his personal platform in the field of sociopolitical activity. Personal influence and the lessons of history are not enough. The matter resolves itself into words against votes. The physicians of the nation now understand that to control the legislative body in regard to a given topic it must be elected and pledged to give congenial support. The warranty of that pledge is to be opposition at the next election. The means political activity beginning at the precinct level through the congressional election and into the halls of Congress.

Organized medicine as such cannot meet the needs of this situation. A corporation is forbidden to become partisan or to supply money in any political activity except for "educational purposes". The limits of what may be regarded as educational has been variously construed by the Courts. In any case, the chartered units that go to make up organized medicine are corporations with professional and scientific interests.

Political activities should be carried out with a different structure even though the individuals may be the same. In this grave hour of need and to serve an urgent political purpose "AMPAC" has been formed. It is the American Political Action Committee and it is also a voluntary nonprofit, unincorporated group whose membership consists of physicians, their wives, the members of their immediate families, and others who believe in good

government and in maintaining the standards of American medicine. Its activities are not to be bound by Democratic or Republican party labels. The program and platform of the individual candidate will determine whom AMPAC supports—not the candidate's party affiliations. It is to be a permanent organization maintaining its effectiveness through the years and serving in the channels of political power for what is best for American medicine. It will collect funds and utilize its financial resources through education, through proven patterns of campaign activity, and will coordinate its efforts with the efforts of those individuals and groups —medical and nonmedical—who are actively engaged in programs designed to obtain good government.

It is reasonably expected that there will be active campaigning on behalf of candidates for public office who share the views and have the voting record to match the AMA's position against socialization. An immediate goal is to change forty seats in Congress in the 1962 elections. It is not planned that it will appear in each Congressional district but will concentrate its efforts where they may be reasonably expected to be most decisive. It is regarded as likely that the counterpart of the national organization will be active in local and state areas. At present political action committees in various stages of activity are in California, Florida, Idaho, Illinois, Indiana, Iowa, New York, Oregon, Pennsylvania, and Washington. One of our active opponents (Ribicoff) has said 180,000 physicans cannot negate the will of 180 million people. AMPAC will show that the patients of 180 thousand physicians can have an effective voice in the affairs of 180 million people.

When the average physican realizes the dangers threatening American medicine, he will bring effective support from his patients to rescue the situation. The Executive Director of AMPAC is Joe D. Miller, 520 North Michigan Avenue, Chicago. He needs the money and support of the American physician.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

AMA EDUCATION AND RESEARCH FOUNDATION

The American Medical **Education** Foundation was established in 1951 for the purpose of providing financial assistance to medical schools. The American Medical **Research** Foundation was established in 1957 for broader purposes, including the provision of financial assistance to medical schools.

Effective January 1, 1962, the programs of AMEF and AMRF will be consolidated within the framework of a single Foundation — the American Medical Association Education and Research Foundation. At the same time, these programs will be expanded and a concerted effort made to provide increased financial assistance to medical schools, in addition to financing the other projects of the Foundation.

The AMA-ERF

This Foundation is incorporated under the laws of the State of Illinois as an educational, scientific organization. All contributions to the AMA-Education and Research Foundation are tax deductible under Section 501(c)(3) of the U. S. Internal Revenue Service Code.

The affairs of this Foundation are managed by a Board of Directors elected annually by and from the membership of the Board of Trustees of the American Medical Association.

At present, the Board of Directors and Officers are:

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The Programs of AMA-ERF

At the present time, the Foundation is seeking funds to support the following programs—

- unrestricted financial assistance to medical schools
- a medical journalism fellowship program
- a research grants program for medical research workers
- a study of perinatal mortality and morbidity
- a study of continuing medical education

During 1962, the Foundation will also undertake to raise funds to assist in the financing of medical scholarships and for loans to medical students, as well as to physicians in internships and residencies.

Fund-Raising by AMA-ERF

The AMA-ERF seeks financial support from physicians, constituent and component medical societies, the Woman's Auxiliary, philanthropic organizations, business entities, and the general public. Within the limitations of the financial needs of its various projects, the Foundation encourages contributors to designate which project they wish to support and, in the case of financial assistance to medical schools, to designate the specific school which is to receive their contribution.

The success of the Foundation's fund-raising efforts is in good measure dependent upon the voluntary cooperation and support from constituent and component medical societies and their counterpart components of the Woman's Auxiliary. The support of physicians and their wives can best be enlisted through the efforts of these local societies. The effectiveness of this approach is clearly demonstrated by the success of constituent and component society and local auxiliary efforts to raise funds for AMEF in the past.

It is suggested that—

1. This information be made widely known to the members of your society.
2. Each state continue to appoint a "state AMA-ERF foundation committee", e.g., your present AMEF committee might become the AMA-ERF committee.
3. Such committees of the constituent medical society should be encouraged to provide leadership for similar action by the component societies.
4. Constituent and component societies should continue and expand their fund-raising programs to support medical schools as well as any other Foundation project which finds merit in the eyes of their members.
5. Officers and other members of your society should be encouraged to make the Foundation and its programs known to businessmen, philanthropists, and other potential donors in their communities.

It is our intention to support these local programs at the national level through direct-mail solicitation directed to all physicians and to other segments of the lay public; through press releases and stories in our own publications; and through individualized presentations to national business and philanthropic organizations.

The coordination of all of these efforts requires effective communication and a spirit of cooperation. I have asked the representatives of our Field Service Division to maintain liaison with the Executive Secretary of your society with regard to the activities of AMA-ERF in much the same manner that we now maintain liaison with respect to other AMA programs. If the national headquarters of the AMA can be of service to your society's AMA-ERF programs in 1962, please make your needs known to the Field Representative assigned to your state.

It is hoped that the above information will clarify the changes made in the AMEF Foundation. These changes were made with the hope and belief that greater financial benefits will be made available to our medical schools under the new operation of the Foundation.

While our contributions to the Foundation have increased during recent years, it is hoped that this upward trend in our contributions will continue and that a wider interest will be developed in this program.

Our medical schools have been the recipients of well deserved financial help through this program in the past. Don't let them down now, but instead, be more liberal, if possible, with your contributions. You will feel better to know that you have participated in this program for the betterment of your Alma Mater.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POSTGRADUATE COURSE TULANE UNIVERSITY SCHOOL OF MEDICINE

The fifth postgraduate course in "Surgery of the Hand" will be presented by the Division of Orthopaedic Surgery of Tulane University School of Medicine on March 22, 23, 24, 1962. Dr. Adrian Flatt will be the featured guest lecturer. This course, under the co-chairmanship of Daniel C. Riordan and Jack Wickstrom, will include anatomy, kinesiology, pathology and traumatology, as well as surgical techniques of corrective and reconstructive surgery of the hand.

Inquiries should be directed to the Division of Graduate Medicine, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans 12, Louisiana.

POSTGRADUATE COURSE OBSTETRIC PROBLEMS IN PRIVATE PRACTICE

A discussion of psychosomatic problems of obstetric practice will be featured in the postgraduate course "Obstetric Problems in Private Practice" scheduled for January 23, 24, 25, 1962, at the Medical College of Georgia.

This course is designed for physicians interested in improving their skills in the private practice of obstetrics. It will consist of a review of current therapy and the conduct of prenatal care, supportive management in labor and delivery and the postpartum period. Emphasis will be on the prevention and management of the minor, as well as the major complications in pregnancy.

The guest faculty will include: Michael Newton, M. D., Professor and Chairman, Department of Obstetrics and Gynecology, University of Mississippi Medical Center, Jackson, Mississippi; and Niles Newton, Ph.D., Assistant Professor, University of Mississippi School of Medicine, Jackson, Mississippi. Coordinator is Preston Lea Wilds, M. D., Assistant Professor of Obstetrics and Gynecology, Medical College of Georgia.

Each course is acceptable for 18 hours of credit by the American Academy of General Practice. Registration is limited to a small group for close participant-faculty communication. Registration fee is $50.00. Application may be made by contacting Dr. Claude-Starr Wright, Director, Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

SECTION ON OPHTHALMOLOGY AND OTOLARYNGOLOGY SOUTHERN MEDICAL ASSOCIATION

The Section on Ophthalmology and Otolaryngology of the Southern Medical Association, announces that it will now accept papers to be considered for presentation before the next annual meeting at Miami Beach, Florida, November 12-15, 1962. Papers will be accepted for consideration for presentation until May 15, 1962.

For further information please contact the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington 1, West Virginia.

DOCTORS RECEIVE TWENTY-FIVE YEAR AWARDS

Silver certificates signifying Twenty - Five Years' continuous affiliation with the American College of Gastroenterology were presented to twenty-three physicians at the Annual Dinner-Dance of the American College of Gastroenterology at the Sheraton-Cleveland in Cleveland, Tuesday evening, October 24th.

The American College of Gastroenterology is composed of specialists in diseases of the stomach and intestines with membership throughout the United States and in foreign countries.

The certificates were presented to: Dr. Henry Baker, Boston 15, Mass.; Dr. Frederick W. Ban-

croft, New York, N. Y.; Dr. Benjamin M. Bernstein, Brooklyn, N. Y.; Dr. Paul Carnot, Paris, France; Dr. J. L. Chereskin, Sarasota, Fla.; Dr. Joseph A. Dubins, Boston, Mass.; Dr. Cesare Frugoni, Rome, Italy; Dr. A. Allen Goldbloom, New York, N. Y.; Dr. Rene A. Gutmann, Paris, France; Dr. Harry Katz, New York, N. Y.; Dr. Richard I. Kilstein, New York, N. Y.; Dr. Milton H. Levy, New York, N. Y.; Dr. Halsey B. Loder, Boston, Mass.; Dr. Raymond J. Lutz, New York, N. Y.; Dr. Milton J. Matzner, Brooklyn, N. Y.; Dr. Victor T. McGrattan, Elmhurst, N. Y.; Dr. William R. Morrison, Belmont, Mass.; Dr. Kenneth Phillips, Miami, Fla.; Dr. Libby Pulsifer, Rochester, N. Y.; Dr. Octavio Rojas Avendano, Mexico, DF; Dr. Norman A. Samuels, New York, N. Y.; Dr. Samson A. Seley, Brooklyn, N. Y. and Dr. Charles Windwer, Brooklyn, N. Y.

BOOK REVIEWS

Relaxation and Exercise for Natural Childbirth: by Helen Herdman, 2d ed. Livingstone, 1959, 31 p. 75 cts.

This short pamphlet employs many of the principles of the exercises that have been commonly used in obstetrics with an effort directed toward exercises during labor. A brief explanation of labor and mechanisms of labor—but all in all this seems a very brief version of the Reed method; again nothing startling.

ABE MICKAL, M. D.

Epidemic; by Frank G. Slaughter, Doubleday and Company Inc., 1961, 286 p. $3.95.

This novel set in the late 1960's in New York has, as its twin villains, "Epidemic" and "Sabotage". The two heroes are an Epidemiologist and a Police Inspector. In between these four factors are a number of female interest figures, the glamour of a big hospital surgical unit, the population of New York, and the certain knowledge that good will win over evil if you read near enough the last chapter.

If one concentrates upon "Epidemic" (represented here by Bubonic and Pneumonic Plague) and the population of New York, this is a thoroughly unfair and uncomplimentary novel. One can guess that the author has a reference describing how bubonic plague is connected with rat fleas and how pneumonic plague is droplet spread. All his other sources of information about the behavior of people appear to refer to the plague pandemics of the middle ages. The reaction of people to this epidemic is as unlikely as a Martian reading about a horse and describing the uses and behavior of a horse as a means of transport in the present day, automobile dominated, New Orleans.

There are many additional misconceptions floating around these other ones. The presumption running right through this novel is that the people of New York are (or will be in the late 1960's) nearly all selfish, frightened, and morally disorganized. They are only headed off from anarchy and catastrophe by a small group of dedicated and morally strong top people. The fight for organization and good by these leaders, is continuous and bitter and although they are big, beautiful and competent, the chance of their success is always in doubt.

The way epidemics start, progress, and are controlled, and the way people behave under the stress of these circumstances, is a favorite and intriguing subject for the novelist and is one which has not yet been fully exploited. This novel does not add anything of interest to this important group of books. This is a bad book which is wrong in emphasis and fact, and which can be read with pleasure and profit mainly by the ignorant or those who want or believe the worst to be true.

K. W. NEWELL, M. D.

Babies by Choice or by Chance; by Alan F. Guttmacher, M. D., Doubleday, 1959, 289 p. $3.95.

Dr. Guttmacher in writing this book takes a very positive stand regarding the need of the medical profession's active participation in birth control and he discusses this with firmness of his feelings and viewpoints, as well as gives a layman information relative to the processes of fertilization, pregnancy, abortion, etc. It may be interesting reading for some lay people.

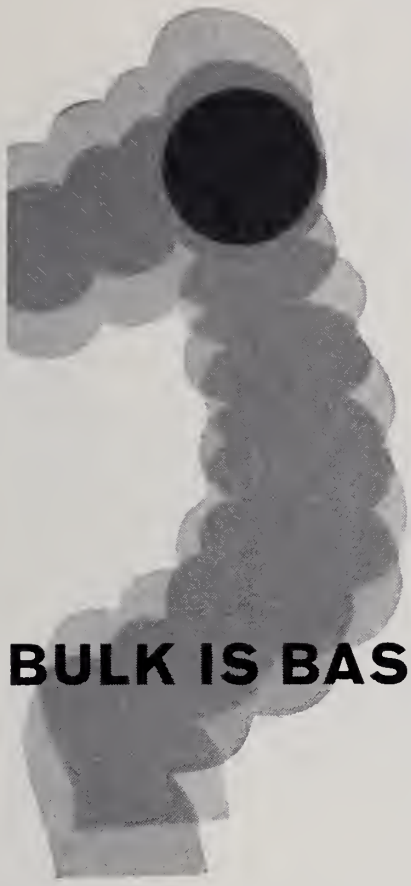
ABE MICKAL, M. D.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Grune & Stratton, N. Y.: Hemodynamics of Aortic and Mitral Valve Disease; Transbronchial Studies, by Alvin J. Gordon, M. D., Paul A. Kirschner, M. D., and Howard L. Moscovitz; Cerebral Vascular Diseases, edited by Robert G. Siekert and Jack P. Whisnant; Progress in Liver Diseases, edited by Hans Popper, M. D. and Fenton Schaffner, M. D., with 36 contributors.

The C. V. Mosby Co., St. Louis: Problems in Surgery, by Frank Glenn, M. D., edited by George E. Wantz, Jr., M. D.





BULK IS BASIC

in treating constipation of pregnancy

METAMUCIL®

corrects constipation without irritation

"Pregnancy and menstruation[1] are contraindications to the use of the stronger cathartics, since the hyperemia may lead to abortion or excessive menstrual flow."

Metamucil, with its soft, mucilloid bulk, mixes with the intestinal contents and exerts gentle pressure on the intestinal musculature to stimulate normal peristalsis.

In pregnant patients, this natural stimulus strengthens the response of the musculature, reinforces the defecatory reflex in the rectum and, in all but rare instances, resort to colonic irritants becomes unnecessary.

Together with proper dietary management and attention to regularity, mild encouragement to regular evacuation which nearly all pregnant patients require is possible with nonhabit-forming Metamucil.

Metamucil is available as Metamucil powder in containers of 4, 8 and 16 ounces, and as lemon-flavored Instant Mix Metamucil in cartons of 16 and 30 single-dose packets.

1. Sollmann, T.: A Manual of Pharmacology and Its Applications to Therapeutics and Toxicology, ed. 8, Philadelphia, W. B. Saunders Company, 1957, p. 206.

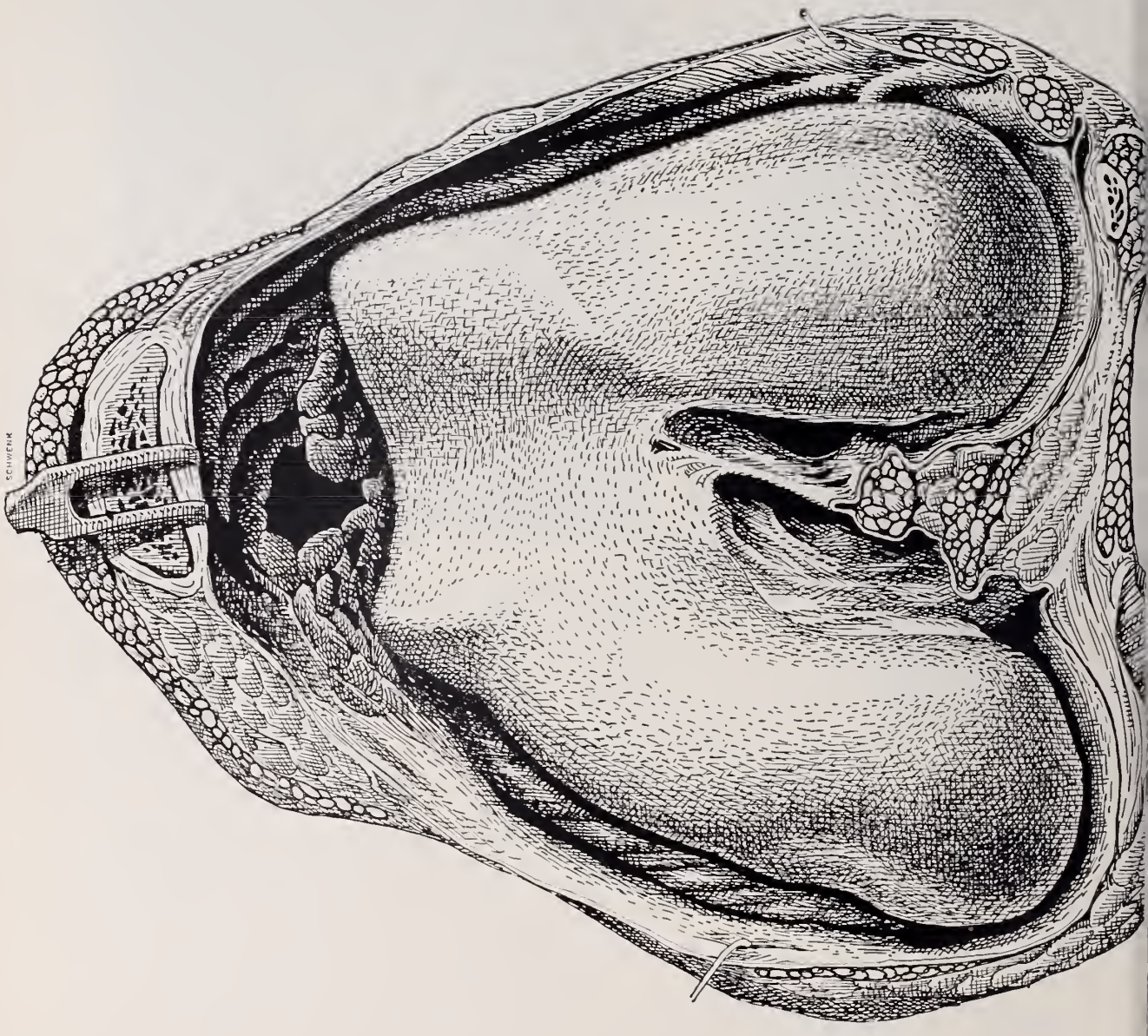
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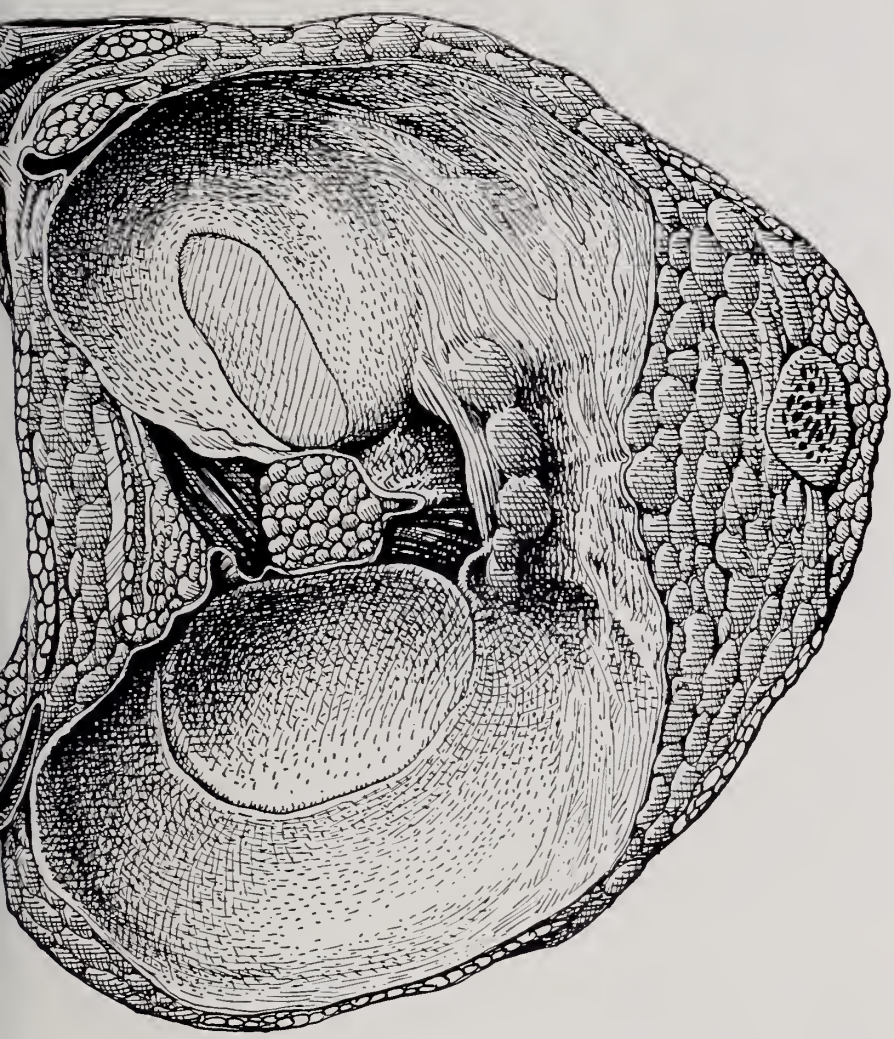
because patients are more than arthritic joints... controlling inflammatory symptoms is frequently not enoug

Even cortisone, with its severe hormonal reactions, can effectively control inflammatory and rheur
toid symptoms. But a patient is more than the sum of his parts – and the joint is only part of a wh
patient. Symptomatic control is but one aspect of modern corticotherapy, because what is good for
symptom may also be bad for the patient.

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Outstanding for Short- and Long-term Therapy

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(Knee Joint, Left: distal end of femur; Right: proximal end of tibia)

TOCORT is an outstanding "special purpose" steroid when the complicating problem is increased
tite and weight gain, sodium retention and edema, cardiac disease, hypertension or emotional
rbance and insomnia.

TOCORT provides unsurpassed anti-inflammatory control without sodium retention or edema —
out the undesirable psychic stimulation and voracious appetite.

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, precautions and contraindications from your Lederle representative, or write to Medical Advisory Department.

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Emotional control regained . . . a family restored . . . thanks to a physician and 'Thorazine'

During the past seven years, 'Thorazine' has become the treatment of choice for moderate to severe mental and emotional disturbances, because it is:

- specific enough to relieve underlying fear and apprehension
- profound enough to control hyperactivity and excitement
- flexible enough so that in severe cases dosage may be raised to two or three times the recommended starting level

Experience in over 14,000,000 Americans confirms the reassuring fact that, in most patients, the potential benefits of 'Thorazine' far outweigh its possible undesirable effects.

Of special value in mental and emotional disturbances: Tablets for initial therapy; Injection (Ampuls and Vials) for prompt control; Spansule® sustained release capsules for all-day or all-night therapy with a single oral dose.

Thorazine® brand of chlorpromazine
a fundamental drug in both
office and hospital practice
Smith Kline & French Laboratories

posed by professional models

'THORAZINE' PRESCRIBING INFORMATION

Because of its pronounced calming effect, 'Thorazine' is an outstanding agent for patients with mental and emotional disturbances, particularly those with symptoms of agitation and hyperactivity. In severe cases, initial use of intramuscular administration may be desirable to control symptoms promptly.

Before prescribing 'Thorazine' for other indications than those given below, the physician should be familiar with the dosage, side effects, cautions and contraindications for such uses. This information is available in the *Thorazine® Reference Manual* and *Physicians' Desk Reference,* and from your SK&F representative or your pharmacist.

ADMINISTRATION AND DOSAGE

Dosage should always be adjusted to the response of the individual and according to the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become troublesome. In emaciated or senile patients, dosage increases should be made more gradually than in other patients.

ADULT DOSAGE

Mental and Emotional Disturbances (e.g., agitation, excitement, or anxiety)—*Starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semiweekly intervals, until maximum clinical response is achieved. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but some patients may require substantially higher dosages. Discharged mental patients, for example, may require daily dosages as high as 800 mg. *Starting intramuscular dose* is 25 mg. (1 cc.). If necessary, and if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d.

Alcoholism—Severely agitated patients: *Starting intramuscular dose* is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. **Agitated but manageable patients:** *Starting oral dose* is 50 mg., followed by 25 mg. to 50 mg. t.i.d. For ambulatory patients with withdrawal symptoms or sober chronic alcoholics, *starting oral dosage* is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before 'Thorazine' is administered.

CHILDREN'S DOSAGE

For Behavior Disorders—*Oral dosage* is on the basis of ¼ mg./lb. of body weight q4-6h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q4-6h). *Rectal dosage* is on the basis of ½ mg./lb. of body weight q6-8h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q6-8h). *Intramuscular dosage* is on the basis of ¼ mg./lb. of body weight q6-8h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day; in children 5-12 years (or 50-100 lbs.)—not over 75 mg./day except in extreme unmanageable cases. In severe cases, higher dosages than those recommended above may be necessary. In such cases, 50-100 mg. daily has been used and, in older children, as much as 200 mg. daily or more may be required.

IMPORTANT NOTES ON INJECTION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least ½ hour afterward because of possible hypotensive effects. The injection should be given *slowly, deep* into the upper outer quadrant of the buttock. If irritation and pain at the site of injection are problems, dilution of 'Thorazine' Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted 'Thorazine' Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery.

'Thorazine' Injection should not be mixed with other agents in the syringe. Because contact dermatitis has been reported with 'Thorazine', nurses or others giving frequent injections should avoid getting the solution on hands or clothing. 'Thorazine' Injection should be protected from light, since exposure may cause discoloration. Slight yellowish discoloration will not alter potency or efficacy. If markedly discolored, the solution should be discarded.

SIDE EFFECTS

The drowsiness caused by 'Thorazine' is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextro amphetamine.

Other side effects reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis.

Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses.

Some patients have an increased appetite and gain weight, but usually reach a plateau beyond which they do not gain.

CAUTIONS

Jaundice: The over-all incidence of jaundice due to 'Thorazine' has been low—regardless of indication, dosage, or mode of administration. It appears to be related to duration of therapy. Few cases have occurred in less than one week or after six weeks. The jaundice that has occurred mimics the obstructive type, is without parenchymal damage, and is usually promptly reversible upon the withdrawal of 'Thorazine'. Although the mechanism is not clearly understood, most investigators conclude that it is a sensitivity reaction in susceptible individuals.

There is no conclusive evidence to indicate that pre-existing liver disease makes the patient more susceptible to jaundice. (Patients with known alcoholic cirrhosis have been treated with 'Thorazine' without further alteration of liver function.) Nevertheless, 'Thorazine' should be used with due consideration in a patient with liver disease.

If a patient on 'Thorazine' suddenly develops fever with grippe-like symptoms, his serum should be tested for increased bilirubin or his urine for the presence of bile. If any of these tests are positive, 'Thorazine' should be discontinued.

Because detailed liver function tests of 'Thorazine'-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

Agranulocytosis: Agranulocytosis, although rare, has been reported. Patients should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted.

Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells, sometimes observed in patients on 'Thorazine' therapy, is not an indication for discontinuing 'Thorazine' unless accompanied by other symptoms.

Potentiation: 'Thorazine' prolongs and intensifies the action of many central nervous system depressants such as anesthetics, barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating 'Thorazine' therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately ¼ to ½ the usual dosage of such agents is required when they are given in combination with 'Thorazine'. (However, 'Thorazine' does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if 'Thorazine' is started. Rather, 'Thorazine' should be started at a very low dosage and increased, if necessary.)

Hypotensive Effect: Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within ½ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition.

In consideration of possible hypotensive effects, the patient should be kept under observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If a vasoconstrictor is required, 'Levophed' and 'Neo-Synephrine'★ are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

Antiemetic Effect: The antiemetic effect of 'Thorazine' may mask signs of overdosage of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

Dermatological Reactions: Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some appear to be due to photosensitivity, and patients on 'Thorazine' should avoid undue exposure to the summer sun.

Neuromuscular (Extrapyramidal) Reactions: With very high doses of 'Thorazine', as frequently used in psychiatric cases over long periods, a few patients have exhibited neuromuscular (extrapyramidal) reactions which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug temporarily withdrawn. These reactions can also be controlled by the concomitant administration of an anti-parkinsonism agent (see *Physicians' Desk Reference*). Depending on the severity of the symptoms, suitable supportive measures such as maintaining a clear airway and adequate hydration should be employed. When 'Thorazine' is reinstituted, it should be at a lower dosage.

Lactation: Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of 'Thorazine'. This is a transitory condition which disappears on reduction of dosage or withdrawal of the drug.

CONTRAINDICATIONS

'Thorazine' is contraindicated in comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.) and also in patients under the influence of large amounts of barbiturates or narcotics.

SUPPLIED

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg. of chlorpromazine hydrochloride.)

Spansule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each 'Spansule' capsule contains 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg. of chlorpromazine hydrochloride.)

Ampuls, 1 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 6 mg. of sodium chloride.)

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, 25 mg. of chlorpromazine hydrochloride; 2 mg. of ascorbic acid; 1 mg. of sodium bisulfite; 1 mg. of sodium sulfite; 1 mg. of sodium chloride; 2% benzyl alcohol as preservative.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains 10 mg. of chlorpromazine hydrochloride.)

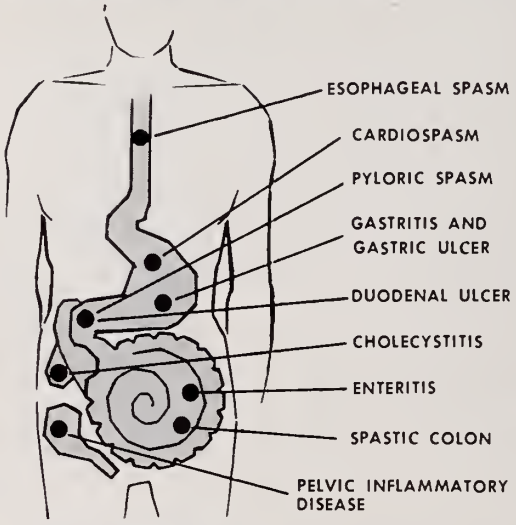
Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains 25 mg. or 100 mg. of chlorpromazine; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles, in cartons of 12 and 36, and in gallon bottles. (Each cc. contains 30 mg. of chlorpromazine hydrochloride.)

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A TOTAL Antispasmodic

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HOMAPIN-4® . . .

A single pure synthetic alkaloid which acts quickly to relieve pain and spasm.

Exceptionally effective, it is four times more potent than Atropine in depressing ganglionic transmissions.

Results are achieved with minimal side effects when administered in the recommended dosage range.

CONTRAINDICATIONS: All anticholinergics should be withheld in glaucoma.

PRECAUTIONS: The effect of Homapin® on the bladder is negligible, but caution should be observed in patients with prostatic hypertrophy.

DOSAGE: One or two tablets every 4 hours. Usual dosage range, 10-80 mg. Homatropine Methylbromide daily.

SUPPLIED: Bottles of 100, 500 and 1,000.

EACH TABLET CONTAINS:

Homatropine Methylbromide	10. mg. (1/6 grain)
Phenobarbital	16. mg. (1/4 grain)

WARNING: May be habit forming.

CAUTION: Federal law prohibits dispensing without a prescription.

COMPLETE LITERATURE AND SAMPLES UPON REQUEST.

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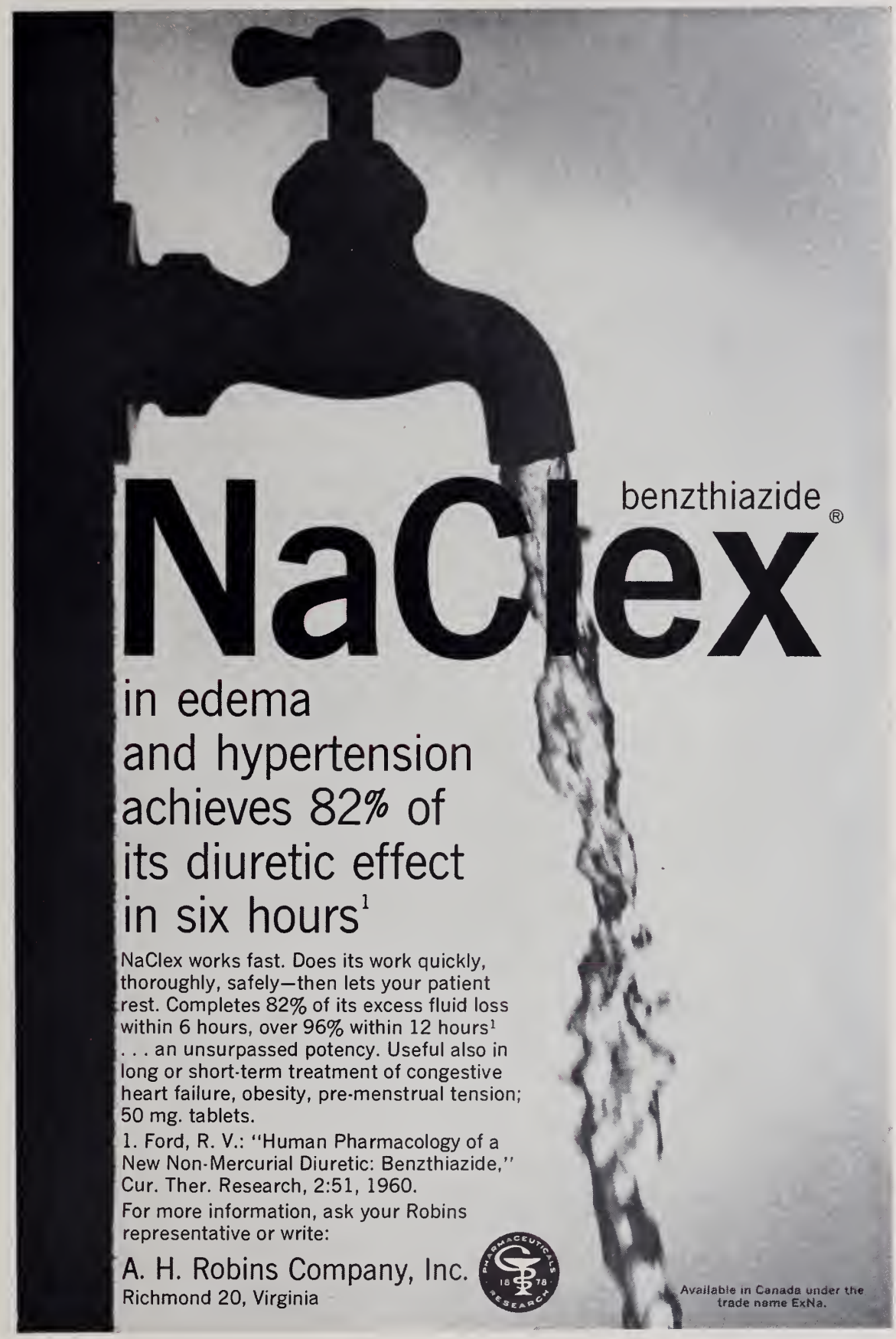
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ANNUAL MEETING

LOUISIANA STATE MEDICAL SOCIETY

May 7-9, 1962

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NaClex
in edema
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achieves 82% of
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in six hours[1]
NaClex works fast. Does its work quickly, thoroughly, safely—then lets your patient rest. Completes 82% of its excess fluid loss within 6 hours, over 96% within 12 hours[1] . . . an unsurpassed potency. Useful also in long or short-term treatment of congestive heart failure, obesity, pre-menstrual tension; 50 mg. tablets.
1. Ford, R. V.: "Human Pharmacology of a New Non-Mercurial Diuretic: Benzthiazide," Cur. Ther. Research, 2:51, 1960.
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For your patients with infections or other illnesses who need therapeutic vitamin support. Each Theragran supplies the essential vitamins in truly therapeutic amounts:

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Riboflavin	10 mg.
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"nutrition...present as a modifying or complicating factor in nearly every illness or disease state"[1]

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]

3. Fernandez-Herlihy, L.: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T. C. C.: in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]

8. Duncan, G. G.: Diseases of Metabolism, 4th edition, W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193. 2. J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, A Trial of Penicillin V, *Brit. M. J.*, July 27, 1957, p. 193. 3. J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957. 4. W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxymethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.

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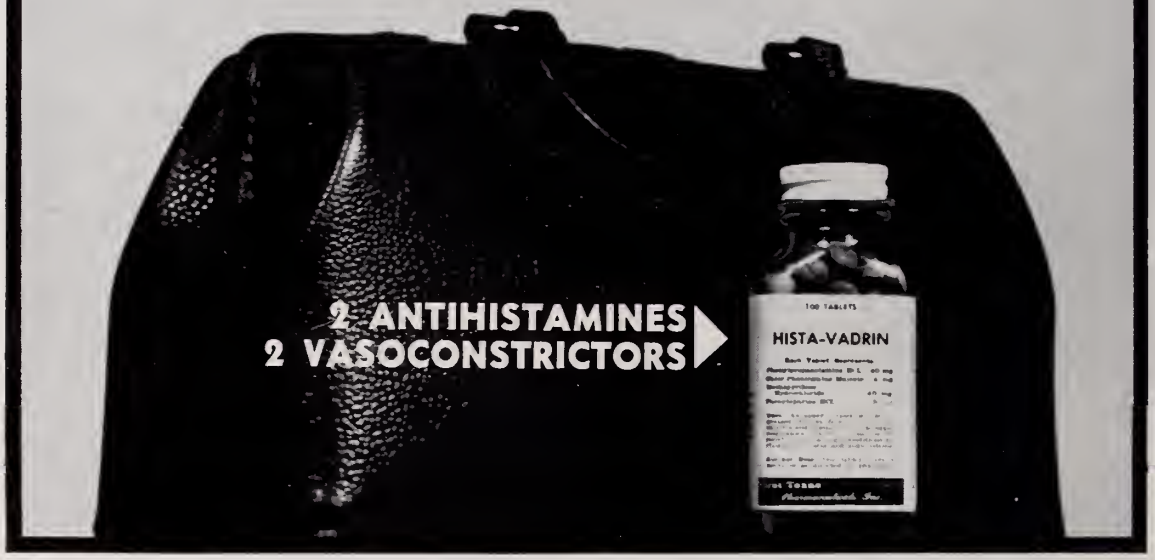
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Supplied: Slow release scored tablets designed to disintegrate in 2 to 3 hours.

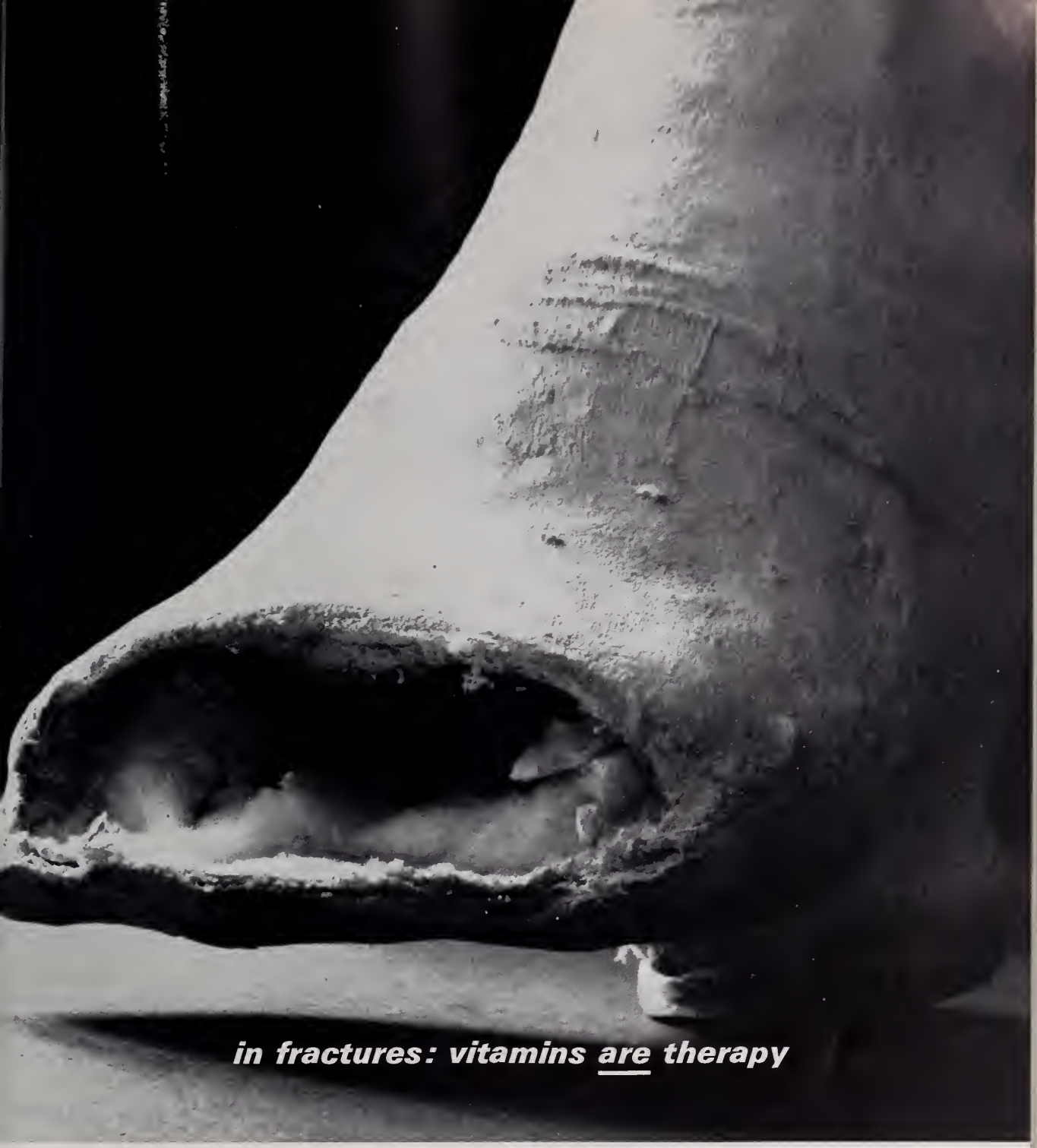
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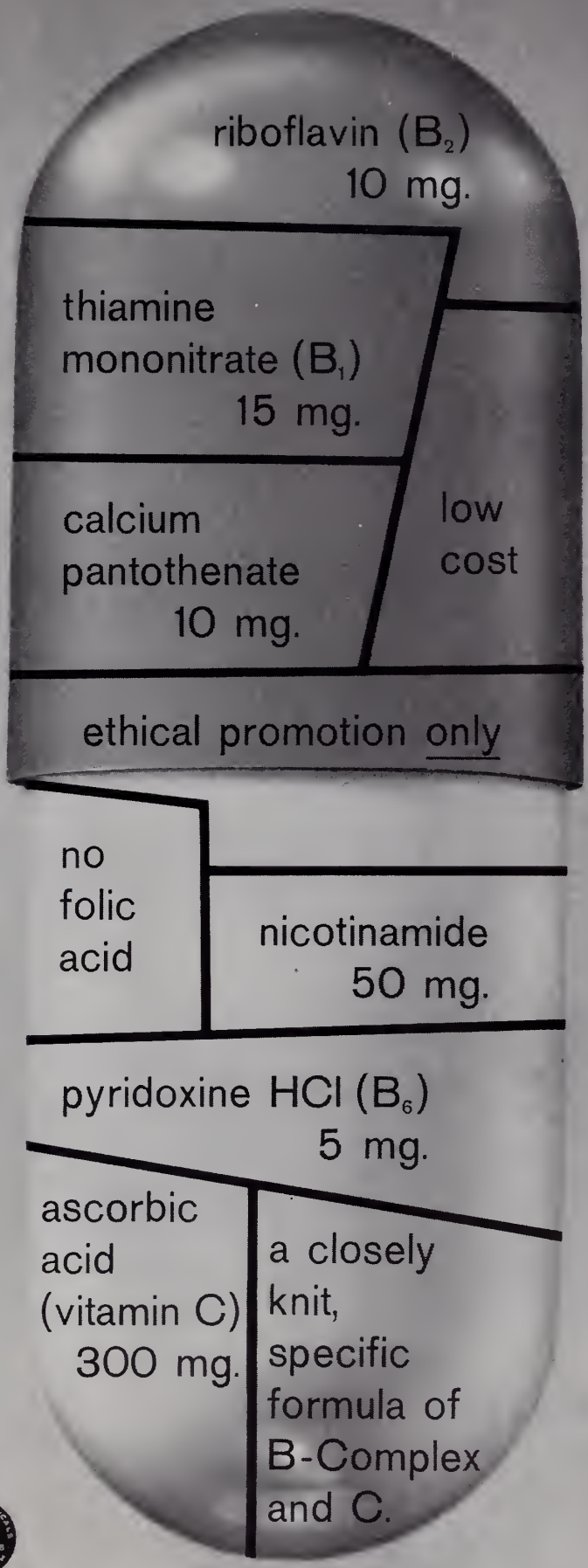
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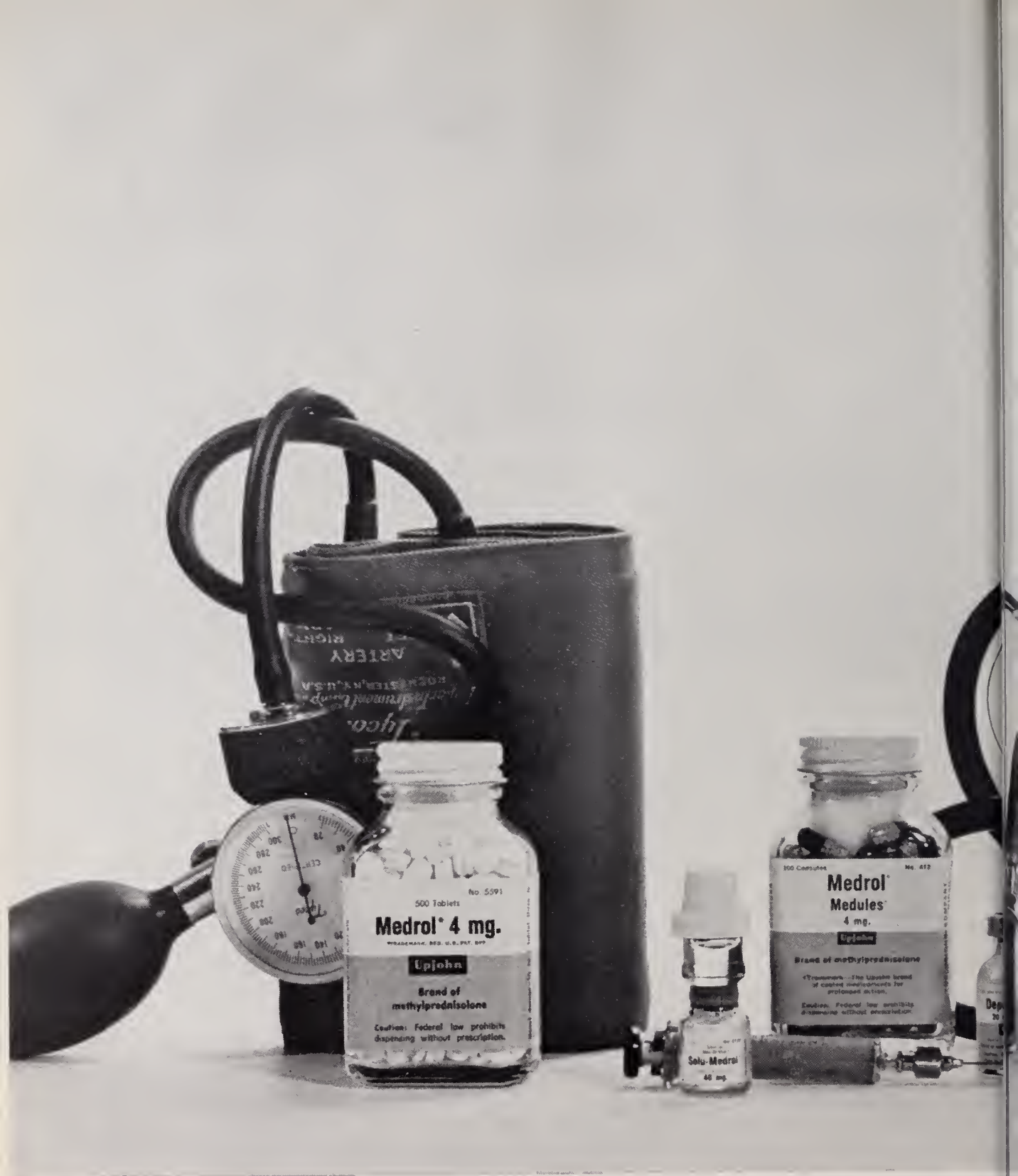
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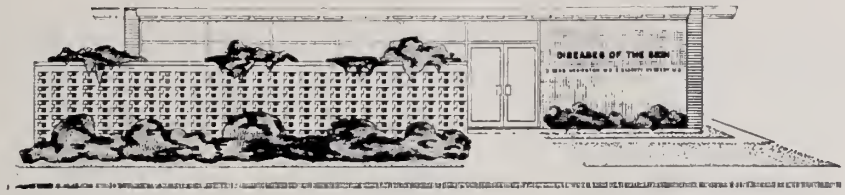
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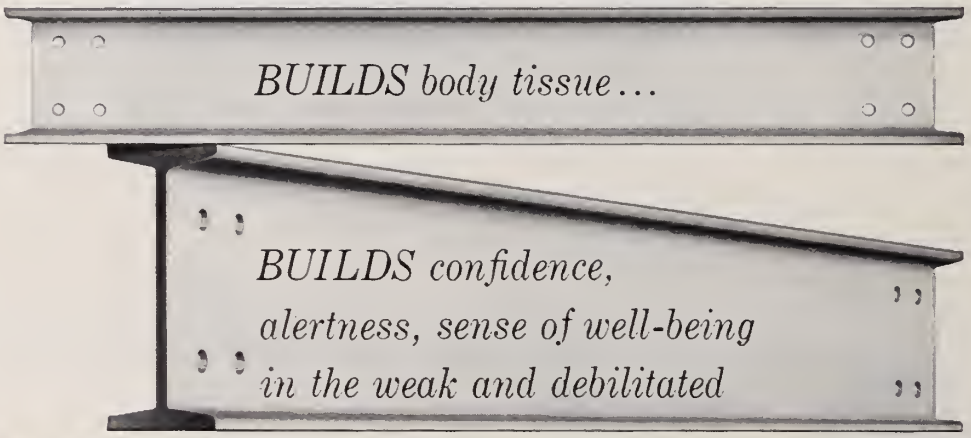
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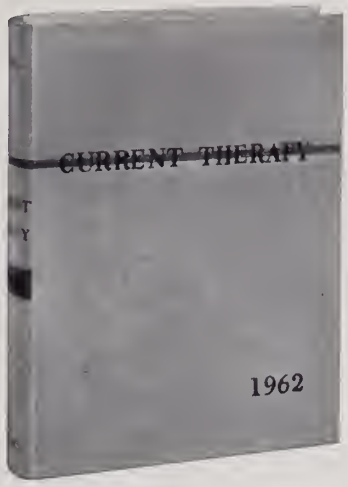
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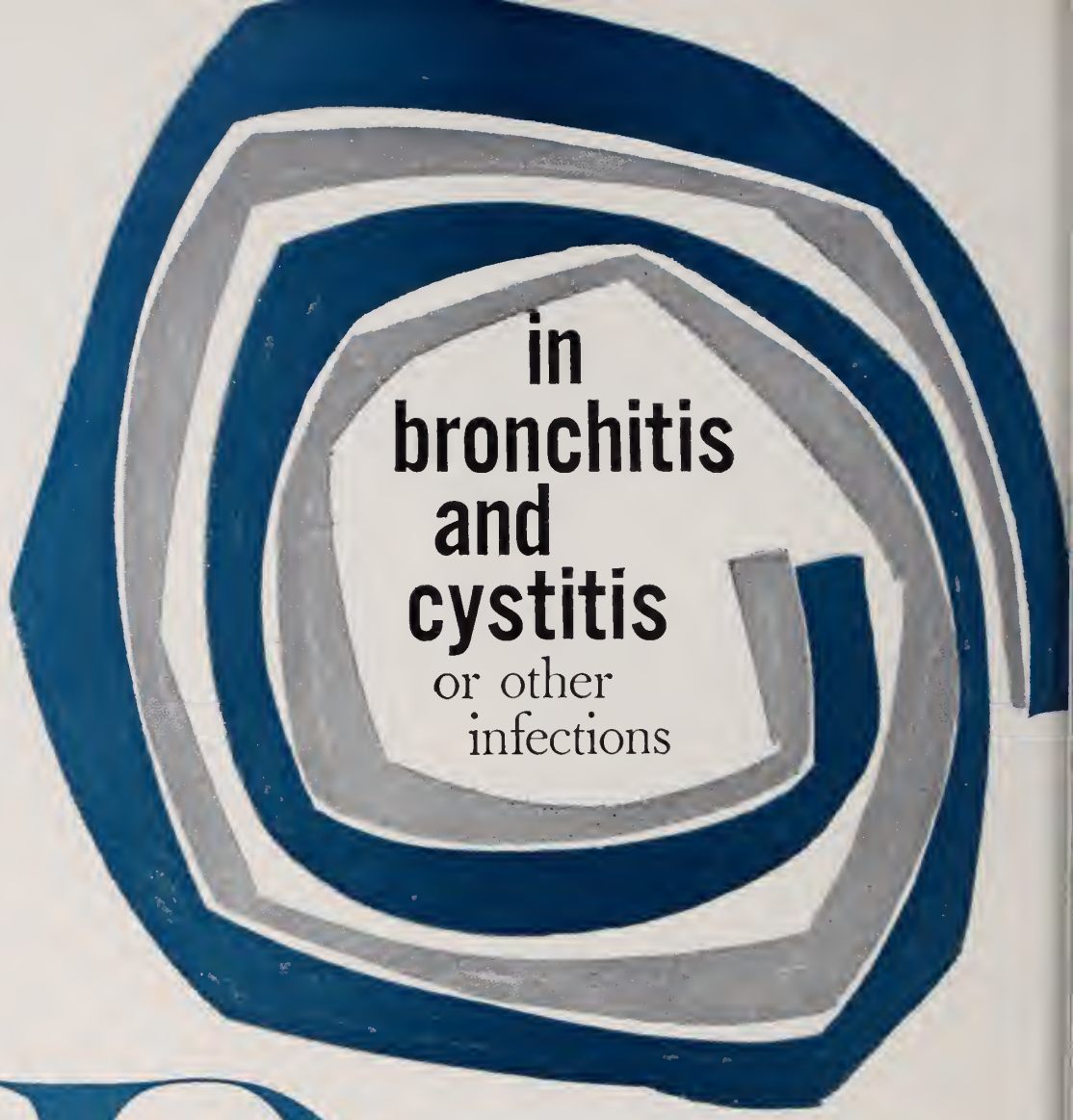
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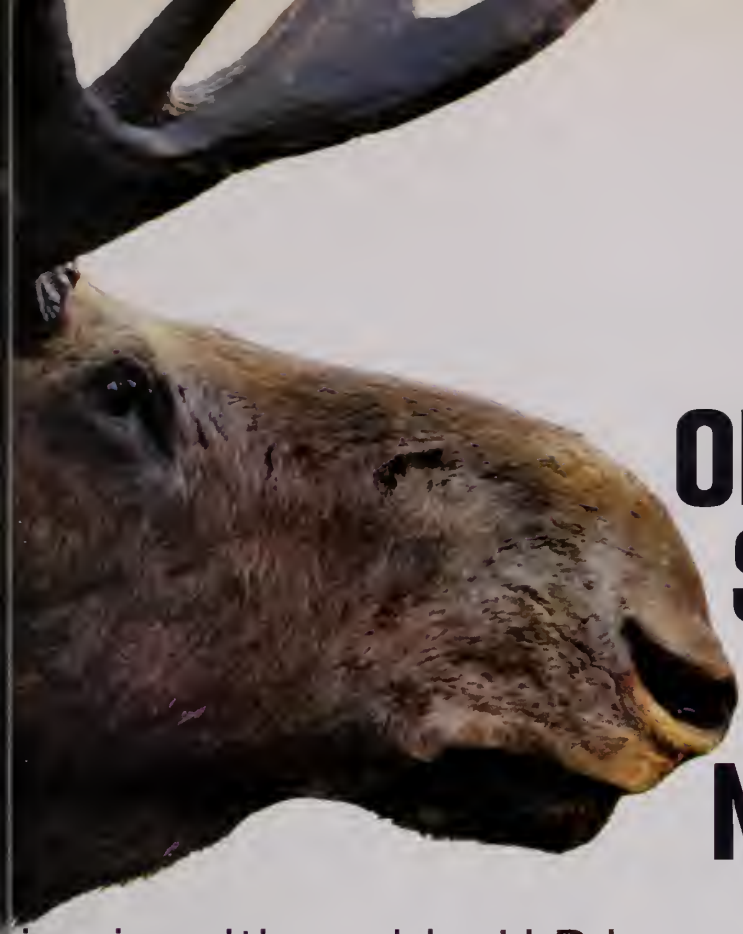
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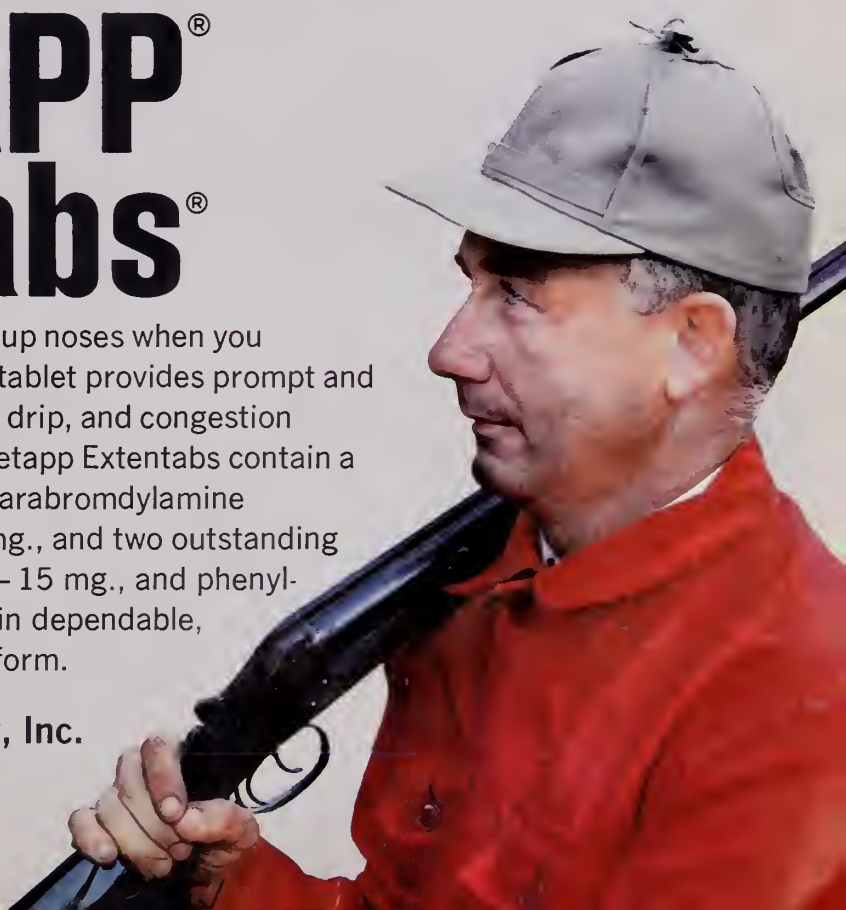
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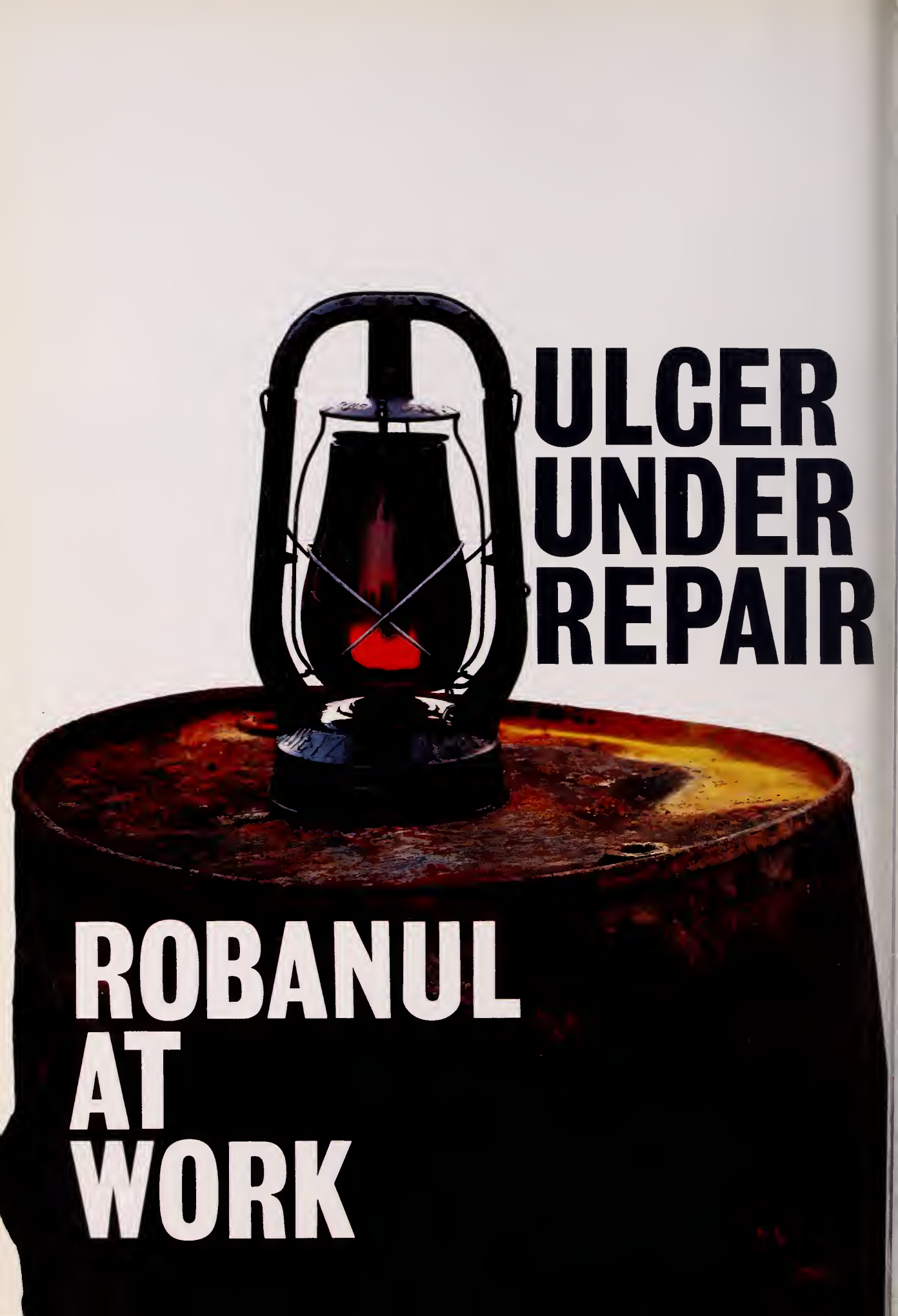
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From Robins research comes Robanul (generically, Glycopyrrolate), first of the "rigid-ring" anticholinergics, representing what may well be the most important advance in anticholinergic chemistry in a decade.

Clinically, both Robanul and Robanul-PH (with phenobarbital) have demonstrated a remarkable ability to provide within 90 minutes—and maintain for 6 to 10 hours—those nearly ideal pharmacologic healing conditions that mean prompt relief of ulcer pain and a successful recovery of your ulcer patient.

There are always important questions about any new therapeutic agent. Below are answers to some of the common ones asked about Robanul:

ROBANUL™

Glycopyrrolate (Robins), 1.0 mg. per tablet (U.S. Pat. No. 2,956,062)

ROBANUL™-PH

Robanul with phenobarbital, 16.2 mg. per tablet

First of all, what does "rigid-ring" mean?
Briefly, this: it describes the use of a fixed pyrrolidine pentagon, or rigid ring, which guarantees a constant 2-carbon distance between reactive parts of the molecule. In line with the "receptor site" concept of the mechanism of action of anticholinergics, this almost inflexible molecule is theoretically more likely to "fit" only certain receptor sites.

Theories are all right, but is Robanul really more selective?
Yes! Evidence of its selectivity can be seen by the surprising lack of typical secondary anticholinergic effects (dry mouth, blurred vision, etc.) that occur at the effective dosage level of 1 to 4 mg. a day. Out of 499 duodenal and gastric ulcer patients treated at this level in investigative studies, only 4.4% had complaints of moderate to severe effects.

How is it for reducing gastric acid?
One investigator[1a] found that a 2 mg. dose of Robanul lowered acid secretion 73% in one hour (compared to a basal-hour period) and 84% in two. A 4 mg. dose dropped secretion over 94% in one hour and 97% in two!

What about acidity, or concentration of acid?
In one study, glycopyrrolate produced significant suppression of pH to 4.5 or higher in 5 of 5 duodenal ulcer patients given a 4 mg. dose, 7 of 8 patients given 2 mg., and 4 of 5 patients given 1 mg.[1b]

Will Robanul depress gastric hypermotility?
In another study[2] with six subjects Robanul decreased gastric motility in every patient. Within 40 minutes after the administration of 2 mg. of Robanul, the frequency of gastric antral contractions decreased from 1 every 24 seconds to only 1 every 2½ minutes. Young and Sun[1c] found a similar effect. Moreover, their results in 7 patients indicated that Robanul, in a dose of 2 mg., did not produce delay in gastric emptying or intestinal transit.

What's the best dosage schedule for Robanul?
It should be adjusted for each patient, and this is where Robanul offers another big advantage. Its "titratability" is unmatched among anticholinergic agents. Robanul's potency makes possible a recommended starting dose of only one milligram t.i.d. Yet its selectivity usually permits much leeway for dosage adjustment upward as necessary, to achieve the most effective dose level for each patient while maintaining a low incidence of undesirable effects on other organ systems.

Is there anything else Robanul does for peptic ulcer?
Much more! For instance, 2 mg. cuts pepsin production about 50% in two hours; 4 mg., about 65%.[1a]...There is evidence that Robanul combats hormonal aspects of gastric secretions as well as vagal in many patients... ...Its activity lasts long enough to reduce acid secretion all night long.[3]...Many ulcer patients have remarked about its fast relief of pain....

One last question: Why not prescribe Robanul for your next duodenal ulcer patient and see for yourself just exactly how effective it is?

References: 1. From the New York Academy of Sciences, Conference on Peptic Ulcer, Oct., 1961. (a) H. C. Moeller. (b) D. C. H. Sun. (c) R. Young and D. C. H. Sun. 2. W. C. Breidenbach: Investigative clinical report, March, 1961. 3. I. A. Feder: Investigative clinical report, May, 1961.

Additional information upon request.

A. H. Robins Company, Inc., Richmond 20, Va.

PHARMACEUTICAL RESEARCH


THIS END UP

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As in all corticotherapy, however, there are certain precautions to be observed. The presence of diabetes, osteoporosis, chronic psychotic reactions, predisposition to thrombophlebitis, hypertension, congestive heart failure, renal insufficiency, or active tuberculosis necessitates careful control in the use of steroids. Like all corticosteroids, Alphadrol is contraindicated in patients with arrested tuberculosis, peptic ulcer, acute psychoses, Cushing's syndrome, herpes simplex keratitis, vaccinia, or varicella.

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1. Clark, T. E., and Jochem, G. G.: Angiology 11:361 (Aug.) 1960.

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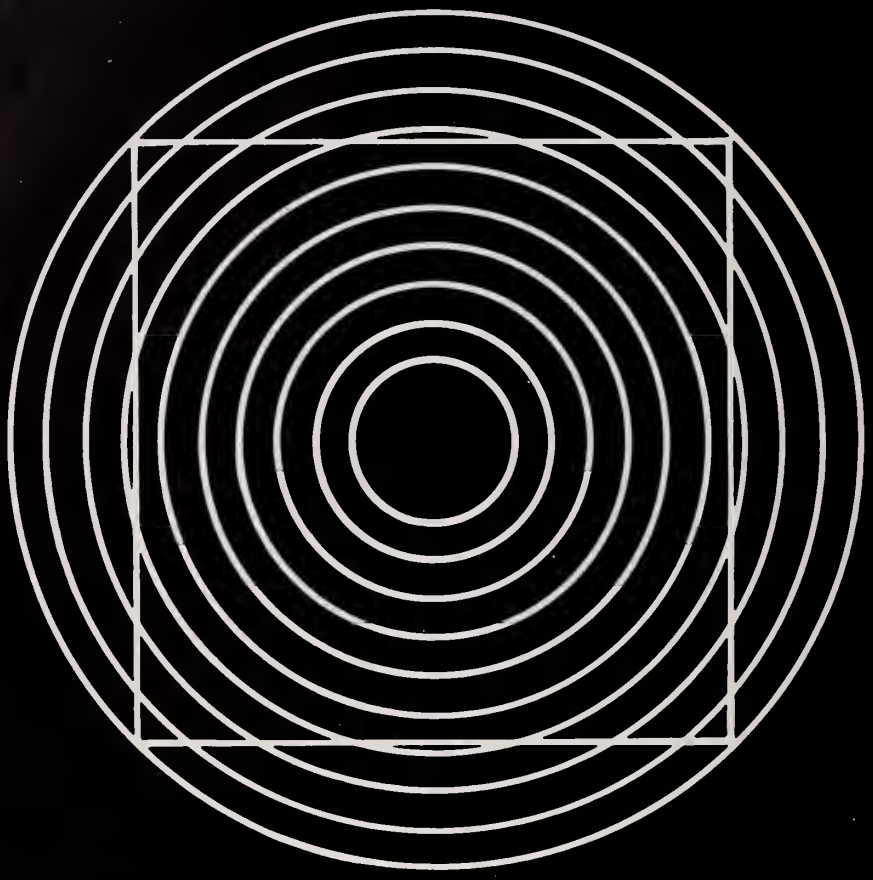
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Photosensitivity*

• A practical and lucid article on the effects of sunlight on the skin and warning to those who are sensitive to it.

ROBERT R. KIERLAND, M. D.†
Rochester, Minnesota

MODERATE and sensible exposure to the sun is beneficial to many people and good therapy for many diseases, but for a few unfortunate persons the sun is detrimental. These people eventually learn, through bitter experience, that they cannot be among those who annually spend millions of dollars "seeking the sun." Persons who react unfavorably to sunlight include those whose occupation makes it difficult to avoid the sun, those who have become light-sensitive by reason of medications administered for other conditions, those who have diseases exaggerated and precipitated by the sun, and those whose complexion renders them more easily injured by the sun.

Photosensitivity may be an acute reaction of rapid onset, or a chronic effect of prolonged exposure.

Normal Results of Exposure to Sunlight

In a study of photosensitivity, the physiologic and pathologic aspects of sunburn and of sun tan are important. In the normal Caucasian, exposure of the untanned skin to direct summer midday sun for 20 minutes may result in sunburn, while a tenfold increase of exposure will result in painful blistering in most instances. Sunshine includes wavelengths between 2900 and 23,000 angstrom units, and the wavelengths within this band, which produce sunburn range from 2900 to 3100 angstroms. The intensity of such radiation, which actually is only about 0.2 of 1 per cent of the sun's total energy reaching the earth, is influenced by a number of factors, such as season of year, time of day, latitude, altitude, denseness of atmosphere, reflection from environment (such as from concrete or from water), and the amount of ozone in the upper atmosphere. Thus, persons exposing themselves to the sun can, within wide limits, vary the amount and intensity of exposure.

The wavelengths of the sun that produce erythema are absorbed in the outer 0.1 mm. of the epidermis. For this reason it is thought that the physiologic and pathologic changes which do involve the dermis are caused by substances formed in and absorbed from the epidermis. These substances which are altered by ultraviolet light have not been identified as yet,

* Read at The New Orleans Medical Graduate Assembly, New Orleans, Louisiana, March 7, 1961.

† Section of Dermatology, Mayo Clinic, Rochester, Minnesota.

even though much experimentation and investigation are underway.

Erythema appears 2 to 3 hours after exposure to the sun or other ultraviolet light and reaches a maximal intensity within 10 to 24 hours. It gradually subsides within the next week. If the exposure or the irradiation has been severe or intense, edema and blistering also may develop, accompanied by hyperesthesia with pain and pruritus. Systemic findings are not uncommon with chills, fever, malaise and even prostration. Finally, melanin pigmentation and scaling are increased.

Tanning Effect

Three factors enter into the tanning effect of the sun. 1. Rays of 3000 to 4000 angstroms cause immediate tanning which is thought to result from the photo-oxidation of preformed, reduced melanin to darker melanin. 2. A delayed tanning effect occurs several days after exposure and is caused by migration of melanin granules not unlike that seen in many other inflammatory dermatoses. 3. Finally, and most important, the true tanning effect follows stimulation and formation of new melanin and is brought about by the same ultraviolet light spectrum that produces sunburn. This true tanning effect reaches a maximal peak after 2 to 3 weeks; without further exposure it begins to decline in about a month.

As with environmental findings, there are other factors which may influence sun tanning. Sun-screen agents tend to filter out the erythema-producing rays and permit the passage of longer pigment-darkening rays, that is, rays of about 3200 angstroms. Individual susceptibility to the tanning effect of the sun varies greatly. For instance, a red-haired, blue-eyed person does not tan easily; rather, it is the dark-haired, brown-eyed individual who tans more readily and more evenly. Endocrine factors such as exist in Addison's disease may influence the tanning effect and all physicians are familiar with the chloasma of pregnancy.

Increasing tolerance to sunshine seems to follow an increase in melanin pigmentation, and an increase in thickness of the stratum corneum epidermis.

Reactions to Sunlight

The causes and abnormal reactions and a classification of the light-sensitive dermatoses are included in the following outline:

I. Cause
- A. Lack of physiologic protection
  - 1. The red-haired, blue-eyed person
  - 2. Vitiligo and albinism
  - 3. Xeroderma pigmentosum
- B. Sensitizers
  - 1. Exogenous (contact dermatitis)
    - a. Plants—lime, citron, meadowgrass, parsley, bergamot (phytophoto dermatitis)
    - b. Dyes—eosin, fluorescin, acroflavin, erythrosin, etc.
    - c. External medications
      - (1) Coal tar and petroleum products
      - (2) Sulfonamides
      - (3) Psoralens
  - 2. Endogenous—(phototoxic and photoallergic reactions)
    - a. Systemic medications
      - (1) Sulfonamides including hypoglycemic agents
      - (2) Quinine
      - (3) Gold (?)
      - (4) Phenothiazine derivatives
      - (5) Barbiturates (??)
      - (6) Psoralens
      - (7) Chlorothiazide derivatives
      - (8) Demethylated chlortetracycline
      - (9) Griseofulvin
      - (10) Para-amino salicylic acid

II. Results
- A. Systemic conditions influenced by the sun (for better or worse)
  - 1. Pellagra—worse
  - 2. Lupus erythematosus—worse
  - 3. Porphyria—worse
  - 4. Keratosis follicularis (Darier's disease)—worse
  - 5. Herpes simplex—sun frequently a "trigger"
  - 6. Psoriasis
  - 7. Pityriasis rubra pilaris
  - 8. Atopic dermatitis
  - 9. Pityriasis rosea

  (6–9: Diseases usually helped by the sun)
- B. Light-sensitive dermatoses
  - 1. Hydroaestivale and vacciniform
  - 2. Polymorphic light eruptions
    - a. Eczematous
    - b. Plaque-like
    - c. Papular and pruriginous
    - d. Erythematous

3. Solar urticaria
   a. Ultraviolet—usually 2900 to 3000 angstrom units, sometimes to 3700
   b. Visible light—especially 4000 to 5000 angstrom units
   c. Infrared—rare

C. Chataigne skin with actinic keratoses (farmers' or sailors' skin)—not senile skin or keratoses
   1. Predilection for fair-skinned, blue-eyed persons
   2. Chronic reaction in persistently exposed persons
   3. A dry, thinned, parched skin with spotty areas of erythema and pigmentation (lentigenes)
   4. Later—keratoses which may progress to both basal and squamous cell epitheliomas
   5. Accompaniments
      a. Senile elastosis
      b. Cutis rhomboidalis nuchae
      c. Colloid milium

Information concerning the specific dermatologic conditions mentioned in the outline can be obtained from many excellent textbooks and from the literature.[1-7] Many of the conditions mentioned are easily recognized. The sun either exacerbates or causes these lesions. The question arises: How can the actinic activation of these dermatoses be proved?

First of all, no testing precludes the necessity of obtaining a detailed history of exposure to the sun or exacerbations of cutaneous lesions after such exposure or exposure to other concomitant factors such as certain weeds, plants, or external or internal medication.

Testing for Photosensitivity

Light testing, which should follow obtainment of the history, is a more difficult procedure. The sun itself is the most practical source, but the environment also must be considered. The pathologic conditions mentioned earlier may have little or nothing to do with the rays that produce either sunburn or sun tanning—the inciting rays may be in the ultraviolet, visible, or infrared spectra. The patient, therefore, may be exposed to the sun directly or through window glass. Window glass excludes sun rays shorter than 3200 angstroms, so if the patient has an exacerbation of dermatosis caused by sun through window glass, the activating spectrum is more than 3200 angstroms. Of all artificial sources for light testing, the carbon arc most closely approaches the spectral discharge of the sun. The cold quartz-lamp is not recommended for light testing, although the hot quartz-lamp is used frequently. It does not, however, provide a continuous spectrum.

Most experimental investigative studies are now being conducted with a monochromatic light source, but these are expensive, difficult to control, and not suitable for the practical procedures that can be adapted by a general practitioner or even a great majority of dermatologists.

Other Facets of Photosensitivity

Thus far I have not distinguished between other facets of photosensitivity which are important to the physician and to the patient. These are the so-called photodynamic, the phototoxic and the photoallergic reactions. The distinction of one from the other may be extremely difficult in the occasional patient and, actually, phototoxic and photoallergic reactions may be combined in the same patient.

The photodynamic effect requires oxygen for a reaction to take place. The reaction time does not change but the reaction is urticarial, there is residual hyperpigmentation, and the reverse passive transfer reaction or result of the test is negative.

In the phototoxic type of reaction, the photosensitizer is located in the epidermis. Rays of specific wavelengths are absorbed by this photosensitizer. The clinical appearance is an exaggerated sunburn. There is no refractory period and no incubation period of 5 days or longer. Residual hyperpigmentation is apparent. This reaction is produced by specific wavelengths and, in the person concerned, the minimal erythema dose to light testing is reduced from the normal dose.

The most usual precipitating factor of a photoallergic reaction is sunburn. This is followed by an incubation period of several days, usually 5 or more, and by a second or delayed reaction, which is urti-

carial, papular, or eczematous. There is no residual pigmentation after such a reaction. Testing shows that the minimal erythema dose is frequently papular in the zone of erythema. With repeated testing, the reaction time becomes less. The passive transfer itself may be positive, but the reverse passive transfer reaction is positive. This entire reaction is not dependent on fixed or specific wavelengths. If testing for the delayed erythema dose is performed, it will be found that this reaction is most commonly positive.

Treatment

In any consideration of treatment of these dermatoses, it is obvious that the patient should avoid the sun to the best of his ability. It is likewise important that he discontinue all medications, either applied locally to the skin or taken systemically, that may be incriminated in the exaggeration or in the precipitation of the cutaneous eruption. Many of these patients use sun-screen or sun-tanning agents. It must be remembered that certain of these aids will contain agents that are known to be photosensitizers by themselves. Among the most frequently advised sunscreens are those that contain the potassium salt of para-aminobenzoic acid, digalloyl trioleate, or 2-ethoxyethyl p methoxycinnamate. These agents are a protection to wavelengths of less than 3200 angstroms. Titanium dioxide may be added and provides a greater protection from wavelengths of more than 3200 angstroms.

The antihistaminic agents are advised for the patient who has a photoallergic reaction such as solar urticaria.

The antimalarial agents are also of value in photoallergic reactions and, in addition, are useful in distinguishing the phototoxic from the photoallergic reaction. For instance, chloroquine does not interfere with normal erythema and pigmentation produced by rays of 2900 to 3200 angstroms. It does prevent and interfere with the delayed photoallergic reaction. Antimalarial agents are of no benefit in cases of phototoxic reaction.

If the suggested treatments fail to provide relief and no treatment that is advised or available is entirely effective, sometimes endocrine or hormonal substances such as androgens or chorionic gonadotropin may be used.

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Today's Medical Economics

One of the critical problems facing medicine today is the growing tendency of the working man to equate health care with a municipally owned service while at the same time demanding discount house prices. —Justin C. Smith, Dean, Law-Medicine Center, Western Reserve University.

Management of the Acute Asthmatic Attack in Children†

• A practical discussion of the management of the acute and potentially severe asthmatic attack in children. The use of remedial agents in the progressive development of the symptom complex is explained.

G. J. FRUTHALER, M. D.
New Orleans

MANAGEMENT of the acute asthmatic attack properly begins with that of the initial signs and symptoms of respiratory irritation in an allergic child known to be susceptible to bronchial asthma. These initial symptoms include sniffling, sneezing, rubbing of the nose, nasal itching or obstruction. Sometimes the youngster has a dry, hacking cough that gradually progresses in intensity and frequency.

Such a patient should have a room that is relatively free of allergens to which he is sensitive and when symptoms begin he should go to this room or some other place where he feels better. Although cold air may tend to induce asthma, frequently the best place for a child with an impending attack is outside, where he avoids the usual household inhalants and the humidity is usually higher.

Oral Medication Includes Antihistamines and Decongestants

When symptoms begin, it is desirable to give an antihistamine and nasal decongestant promptly. Good combinations are Triaminic Syrup® or Juvelets®,* or Histalet Syrup® or tablets.** Children can take these drugs regularly without becoming excited or irritable; for a child four years old, 1 teaspoonful of either syrup every four hours, and for children seven years or older, 1 tablet three times daily, are suitable dosages.

If the youngster coughs, expectorants and mild bronchodilators are indicated; water, iodide, and ephedrine are often beneficial at this stage. There are two syrups of ephedrine, one containing 1 grain per ounce, and another, listed in the National Formulary, containing 1 4/5 grains per ounce. For most children older than five years a combination of syrup of ephedrine N.F. 45 cc., syrup of hydriodic acid 45 cc., and syrup of Decapryn 30 cc., is effective, the dosage of this mixture being 1 teaspoonful every four hours for cough. Decapryn®, a relatively long-acting antihistamine with fairly strong sedative properties, tends to mask the exciting effects of the ephedrine without causing suppression of the cough reflex. This preparation can be used freely, along with the antihistamine-nasal decongestant previously mentioned without causing undue excitement or other side effects.

Adequate Hydration

Since one of the major features of bronchial asthma is plugging of smaller bronchioles and bronchi with thick, tenacious sputum, the importance of adequate hydration cannot be overemphasized. We tell mothers to urge children to drink freely during the early stages of the attack, and we try to prescribe drugs that are not likely to cause vomiting. Because of the non-specific irritating effect of cold in some allergic individuals, warm liquids are preferable to ice cold drinks.

† Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, 1961 in New Orleans.

* Phenylpropanolamine, 12.5 mgm., pheniramine maleate 6.25 mgm., and pyrilamine maleate 6.25 mgm. per 5 cc. of syrup.

** Phenylephrine HCL 6.0 mgm., pyrilamine maleate 4.0 mgm., chlorphreniramine maleate 2.0 mgm., phenindamine tartrate 3.0 mgm. per 5 cc. of syrup.

If the child begins wheezing, it is well to add one of the stronger bronchodilators. A good preparation is Syrup of Nethaprin® by Merrell, 1 teaspoonful every four hours for a youngster of four years or older, or Nethaphyl® tablets, essentially the same drug in tablet form. These are less likely than theophylline to cause nausea and vomiting, but if the patient is already familiar with the use and effect of one of the various combinations of ephedrine, aminophylline, and phenobarbital, we may continue their use.

Use of Suppositories is Questionable

We prescribe aminophylline suppositories reluctantly because of the dangers of overdosage and toxicity. If a youngster receives an overdose of aminophylline by mouth, he will generally protect himself by vomiting; but understandably anxious parents have given lethal doses of the drug by rectum. In recent years we tended to avoid the use of suppositories. The dosage of aminophylline by any route is 3 mg. per pound every four to six hours, and this dosage should not be exceeded. Larger doses cause toxic reactions and are no more effective.

Aerosol preparations provide excellent, quick relief, but patients easily become unduly dependent upon them.

In older children, one of the various preparations of ephedrine, phenobarbital, and aminophylline coated with hard sugar containing isoproterenol may have some advantage. These must be held in the mouth until the outer coating dissolves and then they should be swallowed.

Value of Epinephrine

If the patient shows no improvement with the management mentioned above, or if dyspnea is present at the beginning, he needs epinephrine. One reason for resistance of symptoms to epinephrine is delay in its use. We have seldom encountered a patient who failed to respond favorably to this most potent bronchodilator if it was given within one hour of the onset of dyspnea with wheezing. Frequent, small doses are effective for bronchodilatation and produce less side effects. Most children obtained relief from 0.1 to 0.2 cc. of aqueous Adrenalin® 1:1000, which can be repeated at intervals of fifteen to twenty minutes if necessary. In recent years we have been using Sus-Phrine® almost exclusively. This is a 1:200 suspension of epinephrine in an aqueous medium that can be administered through a small hypodermic needle. While its effect may be delayed for ten to twenty minutes after injection, it lasts for six to twelve hours, so that one injection usually ends an attack. The dose is 0.1 cc. subcutaneously for children two to ten years old and 0.2 cc. for older persons. This dose can be repeated in six to eight hours without ill effects.

Both of the foregoing epinephrine solutions are easy to administer, safe within a wide range of dosage, and highly effective. Someone in the patient's household should be taught how to give injections of these medications, and we have so instructed them for years. We have never had any ill effects, and believe that sometimes the psychologic effect of knowing that a quick, effective medication is available has as much benefit as administration of the drug itself. Also, the ready availability of these medications encourages their use long before the parents would ordinarily call a physician. We believe that this step has prevented many cases of status asthmaticus.

Hospitalization Brings Added Resources

If the child does not respond satisfactorily to three injections of aqueous Adrenalin®, or within one hour to one injection of Sus-Phrine®, he probably needs hospitalization. The benefits of this step are chiefly change of environment, reassurance, adequate hydration, and sedation.

Often dramatic improvement follows a trip to the hospital. For this reason it may be wise to keep the child outside the home for a few minutes while waiting for the various drugs to take effect before deciding upon hospitalization. Once the cycle of wheezing, coughing, and anxiety is broken, it generally does not recur, and

if the patient improves dramatically on the way to the hospital, we do not hesitate to send him home immediately.

Patients who reach the hospital in distress are sedated as rapidly as possible. Because the barbiturates frequently have an effect opposite to that desired, we prefer one of the phenothiazine derivatives. Thorazine® is anti-emetic and tranquilizing as well as sedative.

Use of Aminophylline Intravenously

If the child is sick enough to be in the hospital, it is well to start an intravenous infusion immediately, both for hydration and for administration of drugs. Since the hospitalized patient has already proved to be refractory to epinephrine in this attack, we use aminophylline intravenously. No deaths have occurred when the dose is held to 3 mg. per pound or less every four to six hours under careful supervision. The signs of toxicity are vomiting and agitation, and their appearance calls for stopping the drug rather than increasing sedation. An advantage of aminophylline at this point is that its effect is much more rapid than that of steroids if it is going to be effective. We place 250 mg. of aminophylline into 500 cc. of 5% Dextrose in water and drip the resulting solution into the vein as rapidly as it will flow until the desired dosage of aminophylline has been received. A new bottle is then substituted and the desired fluid and electrolytes are administered.

Use of Steroids

If the patient has not improved within one hour after administration of aminophylline, or if the drug proves toxic, we resort to steroids. The drug of choice is hydrocortisone given intravenously because it has the quickest action and is safe. We try to give 100 mg. intravenously as rapidly as possible. Frequently four to six hours elapse before improvement is apparent. Naturally, whenever steroids are used, the dosage is gradually decreased over a period of seven to ten days before they are discontinued. ACTH seems to have a slower effect than hydrocortisone.

Whether antibiotics are required for acute attacks of asthma depends largely on experience with previous attacks in the individual patient. Some children have attacks almost solely when victimized by acute infections, and prompt administration of antibiotics helps to abort severe attacks. Only the patient's physician can decide whether antibacterial drugs are necessary. If they are used, full doses should be given for a long enough time to eradicate pathogenic organisms, generally five to seven days, preferably as guided by culture and sensitivity studies. If the administration of antibiotics is delayed for twenty-four hours, they often prove to be unnecessary.

The regimen outlined above is for use in ambulatory patients. Although we advise parents to use common sense in regard to exposing asthmatic children needlessly to bad weather and unusual stresses and strains, we prefer to encourage these children to lead normal lives, intensifying drug therapy if necessary, rather than permitting them to become crippled by fear of attacks. The drugs for control of cough and nasal symptoms may be used freely for prolonged periods. In almost all children, the frequency and severity of attacks of asthma can be considerably decreased by avoidance of known allergens, by hyposensitization when indicated, and by early institution of intensive drug therapy.

Summary

Management of the acute asthmatic attack in children consists of removal of offending allergens from the environment, suppression of the allergic reaction with antihistamines, hydration, use of bronchodilators and expectorants, sedation, and reassurance. If these factors are combined into a logical plan of management that is routinely used by the physician and thoroughly understood by the parents, the frequency and severity of acute asthmatic attacks can be greatly reduced. Although improper use of theophylline has occasionally resulted in death, it remains a useful and effective drug;

the maximum dosage is 6 mg. per kilogram of body weight every four to six hours by any route.

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Discussion

Dr. Francis M. Harris, Jr. (Baton Rouge): I am happy to have the privilege of opening this discussion on Dr. Fruthaler's paper about management of the acute asthmatic attack in children.

In general, antihistamines are of little help in the full blown asthmatic attack, and may worsen the clinical status by exerting an atropine-like mucus-thickening effect. Antihistamines are strangely effective in children, especially early in the attack of asthma. They also are capable of reversing epinephrine fastness.

For bronchodilation, ephedrine isomers and isomer mixtures, such as pseudoephedrine, racephedrine, and drugs in the ephedrine family, such as phenylpropanolamine (propadrine) may be tried early. None of these drugs is completely unassociated with stimulating side effects, but cause less central stimulation than ephedrine.

Aminophylline is a useful drug for relieving bronchospasm. It has the disadvantage of being cumulative, especially when dehydration is present, and of having a narrow margin of safety. The deaths attributed to aminophylline in adults have followed its intravenous administration. In children, the reported toxic reactions and deaths have followed principally the administration of rectal suppositories. The difference is probably related to the frequency of the particular route used in the different age spectra, and to the relatively larger doses that have been given rectally to the children on a mg. per Kg. basis. Toxic symptoms have occurred following 10-40 mg./Kg. of aminophylline rectally, 6-7 mg./Kg. intravenously, 17-28mg./Kg. intramuscularly, and 83-90 mg./Kg. orally.[1] Toxic symptoms and signs are restlessness, agitation, delirium, vomiting, hematemesis, convulsions, fever, and albuminuria. These dangers are minimized when one uses recommended dosages for children, and discontinues the drug at the onset of restlessness and vomiting. White and Daeschner[1, 2, 3] recommend the following dosage scale: rectally 7 mg./Kg.; intravenously or intramuscularly 3.5 mg./Kg.; and orally 5 mg./Kg. As little as 2 mg./Kg. of theophylline given rectally every 6 to 12 hours is effective in relieving wheezing. There are children who are unable to tolerate even this small dosage without signs of restlessness and vomiting. Before ordering fractional dosages of suppositories, one should be certain that the theophylline is equally dispersed throughout the suppository. Intravenous aminophylline should be given with due caution. In man, there may be synergism[1, 3, 4] in regard to toxicity between ephedrine and aminophylline. In animals,[4] ephedrine in small doses will double the toxicity of aminophylline; a small amount of aminophylline causes a fourfold increase in the toxicity of ephedrine.

A long acting aqueous suspension of epinephrine (Sus-Phrine®) may be used in place of epinephrine-in-oil. Gas gangrene has been reported as a[5] complication of adrenalin-in-oil injection. Though admittedly rare in the United States, this complication from exogenous contamination can probably be averted by using a preparation which controls spore-forming organisms rather than using 70% ethyl alcohol for skin preparation (Isodine®, Betadine®, Wescodyne®).

In the hospitalized patient, moderate concentrations of oxygen together with water mist are of value in relieving dyspnea. One must remain cognizant of the possibility of oxygen-depressing respiration in the patient who has emphysema, hypercapnia, and hypoxia.

Sedation is often necessary in the fearful, agitated, hyperactive asthmatic child. Drugs of the phenothiazine group are capable of producing frightening extrapyramidal signs. Chloral hydrate is a helpful drug in producing rest.

For the intractable case of asthma, the steroids have been helpful. Relief may be noticed in six hours or delayed up to seventy-two hours. Hydrocortisone, prednisolone, and dexamethasone come in parenteral forms for use when oral administration is impossible. In many cases, it is unnecessary to continue steroid therapy beyond three days.

As emphasized by Dr. Fruthaler, the therapy of the acute attack should begin early, and should be instituted with vigor. The decrease in the incidence of future acute attacks will depend upon the efficient utilization of accepted principals of allergy in the treatment regimen.

Carcinoma of the Middle Ear and Mastoid*
A Report of 3 Cases

• A report of the clinical features of three cases of invasive carcinoma of middle ear and mastoid with indications of the early signs.

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MALIGNANT neoplasms of the middle ear and mastoid are among the uncommon lesions encountered in Otolaryngology. Various estimates of the incidence of malignant tumors of the middle ear and mastoid process in patients seen in Otolaryngological Clinics vary from 1:5,000 to 1:20,000.[1, 2, 3] However, these lesions conform to the general rule that carcinoma occurs more commonly in older age groups—usually between 40 and 70 years of age.[4, 5]

Physicians dealing with cancer of the ear usually leave little chance for error in making an early diagnosis of those lesions affecting the auricle and external auditory meatus. However, early cancer detection in the *proximal auditory canal, middle ear and mastoid process* in most instances is the exception rather than the rule. The prognosis of malignant tumors in these areas has been exceedingly grave and uniformly fatal.

With a view to emphasizing the importance of early diagnosis of middle ear and mastoid neoplasms in an attempt to salvage such patients, we believe it appropriate to report 3 cases and to discuss the clinical manifestations and management.

Report of Cases

Case 1. L.R.V., a 48 year old white male, IBM operator was in good health until March 1960 when he noticed onset of roaring tinnitus associated with left-sided occipital headaches and posterior nuchal pain. A neurological consultant felt that there was a myositis secondary to dental infection and removal of the involved teeth was advised. A total extraction was done and the patient was fitted with upper and lower dentures, without relief of symptoms. In October 1960 the patient noted a sensation of stuffiness in the left ear with hearing impairment. There was no previous history of ear disease. In November 1960 there was further hearing loss, now associated with scanty aural drainage. An otolaryngological consultant felt the underlying cause was an external otitis and treatment for same failed to bring improvement. In December 1960, left post-auricular lymphadenopathy was noted which cleared with antibiotic therapy; but the scanty drainage from the left ear continued.

Physical examination in March 1961 revealed an exophytic, friable mass bulging through a perforated tympanic membrane. The perforation involved the central ⅔ of the drum. The nasopharynx, by posterior mirror rhinoscopy revealed an obstructed, ragged left eustachian tube orifice. There was an associated perceptive deafness of 80 decibels average in the speech frequencies, A.S. Hearing in the right ear was within normal limits. Facial nerve function was intact. There was no other cranial nerve involvement, no palpable cervical lymphadenopathy.

Mastoid x-rays revealed poor pneumatization of the left temporal bone without evidence of bone destruction or cholesteotoma. There was no evidence of bone erosion at the base of the skull. Biopsy of the exophytic mass protruding through the perforated tympanic membrane revealed an epidermoid carcinoma, transitional cell type.

The patient was admitted to Hotel Dieu on March 30, 1961 for middle ear and mastoid exploration. On April 4, 1961 a left radical mastoidectomy was performed. The mastoid portion of the left temporal bone was free of neoplasm. However, a keratinizing, friable tumor mass completely filled the mastoid antrum, epitympanum, mesotympanum and hypotympanic air cells; and completely surrounded the ossicles. The tumor also invaded and exposed the dura of the temporo-sphenoidal lobe; extended into and widely eroded the eustachian tube as well as the bone of the promintory exposing the cochlea. The bony fallopian canal of the facial nerve was in-

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tact. Anteriorly, there was erosion through the tympanic plate with exposure of parotid capsule. It was obvious that complete surgical extirpation was impossible.

The histologic diagnosis of tissue removed from the middle ear and antrum of the mastoid as well as tissue from the nasopharyngeal orifice of the eustachian tube was transitional cell carcinoma. On April 18, 1961 roentgen ray therapy was started. The patient received a total of 5450 r in air via bilateral ports to include the nasopharynx over a period of 38 days. Symptoms of intracranial metastases appeared in July 1961. The patient's course is now in a terminal phase with blindness and considerable pain.

Case 2. M.T., a 51 year old white, auto-glass merchant was in good health until August 1958 when he noticed a sensation of fullness in the left ear with hearing impairment. There was no previous history of middle ear disease. The initial otolaryngologist made a diagnosis of secretory otitis media. Myringotomy was performed with aspiration of clear amber fluid. Twelve such procedures were performed over a 3 month period. The right ear was at no time involved. In October 1958 there was onset of profuse purulent discharge with intermittent pain in the left mastoid region. The patient visited a second otolaryngologist in November, 1958. Physical examination revealed a small perforation in the anterior inferior portion of the membrana tympani through which there was a profuse, turbid discharge. Mastoid x-rays revealed diffuse clouding of a well pneumatized mastoid portion of the left temporal bone with loss of air cell detail. Therapy with gantrisin and penicillin succeeded in stopping the discharge in 3 weeks, but the pain persisted. Examination by one of the authors on November 26, 1958 revealed that the tympanic membrane was intact. However, there was a gray-red mass in the hypotympanic area visible through the tympanic membrane which was suspicious of neoplasm. Mastoid x-rays repeated in December 1958 revealed diffuse clouding of the middle ear and mastoid portion of the left temporal bone with evidence of extensive bone destruction of the mastoid tip. There was no palpable cervical lymphadenopathy.

On December 11, 1958 a left peripheral facial palsy appeared involving all branches. A mastoido-atticotomy was performed on December 13, 1958. A friable, granulomatous neoplasm was found to involve the entire mastoid portion of the temporal bone with extension into the middle ear. There was a pathological dehiscence of the bone over the sigmoid portion of the lateral dural venous sinus with invasion of the sinus wall. The mastoid tip was partially destroyed with invasion of the tendinous insertion of the left sternocleidomastoid muscle. The facial nerve was intact in its intratympanic course but was invaded by neoplasm at the stylomastoid foramen. The histologic diagnosis was epidermoid carcinoma, transitional cell type. The patient received cobalt irradiation therapy without affecting the advancing neoplasm which became metastatic to the cervical lymph nodes. In February 1959 the patient underwent perfusion chemotherapy with fatal reaction.

Case 3. C.B., a 45 year old white housewife was admitted to the hospital in August 1958 for otologic examination and biopsy under general anesthesia. The patient complained of persistent drainage from the right ear since November 1957. The aural discharge was sudden in onset and unrelenting.

Physical examination prior to admission revealed an exophytic warty growth involving the mesial portion of the external auditory canal, obscuring visualization of the tympanic membrane. There was an associated conductive deafness. Temporal bone x-rays revealed a localized area of density involving the middle ear and periantral air cells of the mastoid. There was no evidence of bone destruction. Previous films taken in March 1958 showed a normal pneumatized temporal bone without evidence of disease.

Otologic examination under anesthesia revealed a keratinizing, exophytic neoplasm involving the proximal portion of the external auditory canal with destruction of the tympanic membrane and invasion into the middle ear. Biopsy specimens revealed a squamous cell carcinoma. A radical mastoidectomy was subsequently performed. The carcinoma was found to invade the middle ear. The bony tegmen of the epitympanum was eroded and the temporo-sphenoidal dura was seeded with neoplasm. The cartilagenous tympanic plate was also invaded with exposure of parotid salivary gland. It was obvious that complete surgical extirpation was impossible and roentgen ray therapy was started in September 1958. The patient received a total of 14,000 r in air via 5 ports over a period of 42 days. The mastoid cavity remained dry and clean and the patient felt well. In December 1958 a one cm. pre-tragal parotid lymph node was palpable. The mastoid cavity became filled with keratinizing tumor tissue; histologic examination revealed recurrent squamous cell carcinoma. Chest x-ray was negative.

In January 1959 the patient was readmitted. An exploratory operation revealed extension into the parotid salivary gland with lymph node metastasis. The mastoid cavity was lined with carcinoma. There was further invasion of bone about the previously seeded middle fossa dura. Invasion of the tympanic orifice of the eustachian tube was extensive. The parotid salivary gland was removed with preservation of the facial nerve. A radical neck dissection was also performed in continuity. Post-operatively, however there was continuous advance of neoplasm with intracranial metastasis. There was a pro-

gressive downhill course over the subsequent 12 months with death in January 1960.

Discussion

Origin: Of the carcinomata which occur in this region, the most common is the epithelioma or squamous cell carcinoma. Many investigators feel that such growths may originate in the depth of the external auditory canal and proceed by direct extension to the middle ear. However, the fact that there is a rare epidermoid carcinoma found in the middle ear or mastoid without involvement of the epithelium of of the external canal makes it reasonable to assume that such a lesion may have its origin from metaplastic squamous epithelium of the tympanic mucosa; or within the eustachian tube itself. Chronic suppurative otitis media and mastoiditis is usually *not* associated with this disease.

Symptomatology: There are no characteristic early clinical symptoms of cancer of the external canal, middle ear and mastoid. A constant feature of the illness is an aural discharge, sometimes serous, then purulent and foul of less than a year's duration in most instances. This point in the history must be related to the course of the illness since this disease is easily confused with chronic suppurative otitis media and mastoiditis.

Pain all out of proportion to the apparent extent of bone disease or amount of purulent discharge is one of the more common symptoms.[4, 5] A history of purulent, bloody aural discharge is particularly important, especially in the individual over 40 years of age. Symptoms of eustachian tube blockage may be alluded to by the patient.

Facial paralysis, labyrinthine irritation and preceptive deafness when associated with a malignant lesion are more valuable from a prognostic rather than a diagnostic standpoint because they indicate extensive bony infiltration. Since the intratympanic segment of the facial nerve is more vulnerable than the otic capsule, facial paralysis is a common finding and may occur rather early in primary middle ear carcinomas.[2, 4-7]

Physical Findings: One may detect friable, easily bleeding granulation tissue or the presence of denuded bone in the external auditory canal. Either of these findings should serve to arouse the suspicion of carcinoma. Failure to suspect cancer when any form of "granulation tissue" is present in the ear and failure to examine microscopically all tissue removed are grave errors. Furthermore if cancer is suspected, one must persist in a diagnosis of malignant neoplasm even though the first biopsy report is negative. Such a situation is not uncommon since exuberant granulations may develop as the result of secondary infection and thus disguise an underlying malignant neoplasm. The conductive deafness and discolored tympanic membrane are important findings which have been mistakingly attributed to eustachian tube closure and secretory otitis media.

Roentgenographic Studies: Too great or too little reliance upon x-ray study of the temporal bone can contribute to a postponement in diagnosis of cancer of the ear. A false sense of security should not be developed by acceptance of a report on roentgenograms of "no evidence of bone destruction" as a conclusive finding which rules out carcinoma. Early cancer generally fails to manifest itself by bone changes except occasionally. If the tumor has produced extensive changes visible in roentgenograms it will usually be manifest in the middle ear clinically.

Management: The management of the patient with cancer of the ear cannot be outlined categorically. No form of treatment has been highly successful. Delay in diagnosis probably is the most important factor affecting therapy. This delay can be caused by often timid and intermittent antibiotic therapy which reduces the secondary infection, decreases the patient's symptoms and masks the basic cause of his complaints.

Radical surgical excision and irradiation therapy have been the only therapeutic procedures of any value. The combination of these two forms of therapy has been advocated by the majority of investiga-

tors [2-6] and has been used in the patients described herein. Radical mastoidectomy with neck gland dissection in continuity has also been recommended.[8] In addition, if infiltration of the external auditory canal is extensive, total parotidectomy with sacrifice of the facial nerve is also advocated. However, in contemplating this radical approach, one must consider not only the possibility of metastasis to cervical lymph nodes but also extension through peritubal (eustachian) lymphatics, the invasion of the petrous apex of the temporal bone and the involvement of the middle and or posterior fossa dura. Thus the preliminary site of the lesion and the extent of involvement of the middle ear and temporal bone must determine the type of operation to be employed in each instance.

Chemotherapeutic perfusion techniques have been disappointing, to date, in middle ear and mastoid cancer.

Summary

Three patients with epidermoid carcinoma of the proximal external auditory canal, middle ear and mastoid are reported.

The clinical manifestations and management are discussed with the view toward encouraging a vigorous effort for early detection of an epithelial deep-aural cancer which to date has been uniformly fatal.

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The Dangers of Specificity

The flow of new and potent drugs today compels the physician to continue his postgraduate education as he never had to before. The more specific the drug—and every effort of pharmaceutical research is bent toward making drugs more pinpointed in action against particular conditions—the greater the likelihood of some unwanted side reaction . . . Much pharmaceutical advertising warns the buyer not to use the product. It's rather like an ad for a washing machine which says, "This is a good washing machine but don't put a shirt into it or you may ruin it. It does a good job on sheets but is lousy on socks."—William B. Graham, President, Baxter Laboratories.

Experiences With Percutaneous Renal Biopsy*

• An informative report concerning Percutaneous Renal Biopsy on 247 patients with few complications and no deaths. Renal tissue obtained in 84 per cent and diagnosis established in 75 per cent.

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THE value of the percutaneous renal biopsy in the study and treatment of various disorders of the kidney is now well established. Pathologic interpretations based on the study of the end-stages of kidney disease seen at autopsy are often ambiguous. The renal biopsy permits us to visualize the disease process in its earlier stages and to follow its progress. The first report utilizing the percutaneous method was published by Perez Ara in 1950 [1] followed by the more extensive study of Iversen and Brun in 1951.[2] Of the various techniques which have been described, that of Kark and Muehrcke is now most popular in this country.[3] Since 1954 we have performed over four hundred percutaneous kidney biopsies without any serious complications.

I. Biopsy Method and Precautions

The Franklin modification of the Vim-Silverman needle is used to obtain the specimen. Table 1 lists the precautions that are taken prior to and following the biopsy. One-half hour prior to the biopsy, 50 mg. of Demerol is given intramuscularly, with the meal preceding the biopsy omitted. The patient is placed in a prone position with a rolled pillow or sandbag placed under the upper abdomen to provide support (figure 1). The site to be biopsied is determined and marked on the x-ray (figure 2). The lower pole is selected, near the lower calyceal system. The

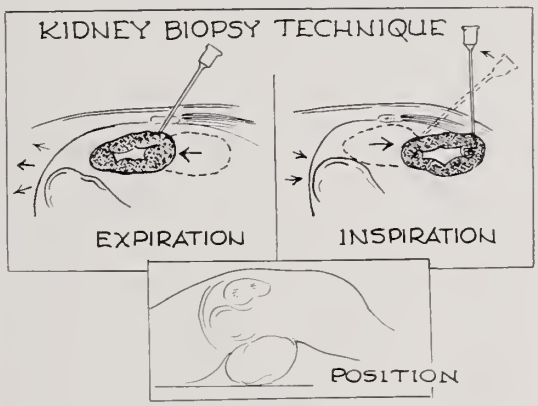


Figure 1. Kidney biopsy technique showing position of patient and respiratory swing of needle while in the kidney.

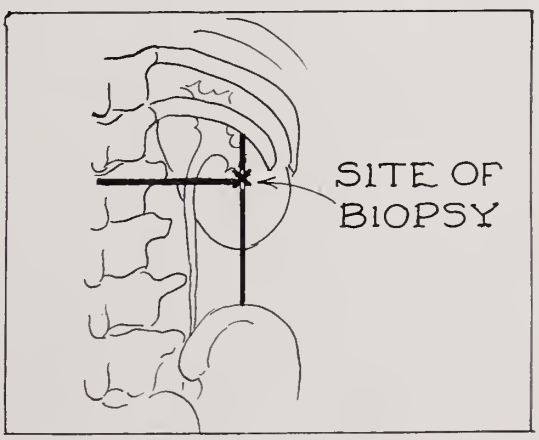


Figure 2. Site of biopsy as localized on x-ray. Heavy lines indicate measurements to be taken.

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distance of this site from the spinous process of the vertebrae, lower border of the 12th rib and iliac crest are then measured on the x-ray film and the measurements transposed to the patient. The first two measurements are the most important, with the distance from the iliac crest used as a check. This should not be more than one-half inch different than

TABLE 1.
KIDNEY BIOPSY PRECAUTIONS

1. Hospitalize the patient
2. Obtain an intravenous pyelogram to determine that both kidneys are present
3. Determine the bleeding, clotting, prothrombin times and platelet count
4. Give sedation prior to biopsy
5. Post-biopsy precautions
   a. Prescribe bed rest for 24 hours
   b. Observe vital signs carefully
   c. Give adequate fluids
   d. Collection of urine to rule out gross hematuria

the measurement on the x-ray. Either kidney may be used, but the right kidney is preferred since it is easier to approach.

The skin is surgically cleaned and draped in the usual fashion. The skin and subcutaneous tissue at the selected site is anesthetized with 1 per cent procaine, with the anesthetic introduced to the depth of the kidney. The kidney surface can usually be felt as the needle is introduced. A small incision is made through the skin before the biopsy needle is introduced. The outer needle sheath with obturator in place is then advanced perpendicularly to the kidney surface. The operator can feel the needle advance through the soft tissue and muscle layers with the kidney surface offering firm resistance in most cases. The needle is advanced just within the kidney capsule. The respiratory swing will substantiate the fact that the needle is within the kidney. On inspiration the needle will swing cephalad and on expiration it will swing caudad (figure 1). The obturator is then removed and the cutting needle inserted. With the patient holding his breath, and the outer needle held firmly at the skin margin, the cutting needle is then advanced to its full depth through the cortex. The outer needle is then rotated around and pushed in to the same depth as the cutting needle in order to sever the specimen completely from the kidney. Both needles are then twisted and removed. The specimen is immediately placed in the fixative. In case a bacterial infection of the kidney is suspected the needles may be cultured in broth media. Pressure is applied over the biopsy site for about one minute and a pressure dressing applied. In our experience an exploring spinal needle has not been necessary. If the local anesthesia is adequate only a slight pressure sensation is felt rather than pain, as the kidney is biopsied. We do not consider it necessary to keep the patient in the prone position on the pillow or sandbag, but he should remain in bed for twenty-four hours.

II. Contraindications

The conditions which in our opinion contraindicate renal biopsy are listed in Table 2. We do not believe that uremia or malignant hypertension are contraindications as others have maintained.[4, 5, 6] We have had no personal biopsy experience with cases of renal tuberculosis, kidney tumors or hydronephrosis. Patients with chronic renal disease and contracted kidneys may present a greater hazard because of the greater risk that the biopsy needle may miss the small kidney and damage adjacent structures. Fibrosis in such a kidney makes it more difficult to remove the specimen and might theoretically increase the risk of hemorrhage. However, the presence of uremia prior to biopsy has not increased the frequency or severity of complications in our experience.

TABLE 2.
CONTRAINDICATIONS FOR KIDNEY BIOPSY

1. Failure of visualization of kidneys on x-ray
2. Single functioning kidney
3. Hemorrhagic diathesis
4. Uncooperative patient
5. Abnormal kidney position

III. Results

Tables 3 and 4 summarize our experience with percutaneous renal biopsy in 247 patients. Our oldest patient was 74

years and the youngest 2 years old. A total of 401 biopsies were attempted and tissue was obtained in 338 or 84 per cent. Of these, 290 or 75 per cent of all biopsy attempts yielded specimens adequate for histologic diagnosis. We consider a specimen adequate if there are at least five glomeruli present. Most of the adequate specimens contained more than this number with both cortex and medulla usually being represented. Ninety patients had more than one biopsy, with as many as eight biopsies being performed on one patient.

TABLE 3.
KIDNEY BIOPSY MATERIAL

(Number of patients—247)		
Biopsy attempts	401	
Tissue obtained	338	(84%)
Adequate tissue for diagnosis	290	(75%)
Complications	15	(4%)

It has been our experience that even in the small core of renal tissue provided by needle biopsy, meticulous and systematic microscopic study will usually yield valuable information. The biopsy specimen is systematically described. In the glomerulus the important features to look for and describe are the cellularity, basement membrane thickness, glomerular capillary size and the state of Bowman's capsule. The description of the renal tubules should include the presence of degenerative changes, atrophy, dilatation, necrosis and casts. The arterioles and arteries are described with particular reference to intimal and medial hyalinization, hypertrophy of elements of the walls, inflammatory changes and necrosis. Interstitial edema, fibrosis and inflammation are noted when present. Accurate interpretations are not always easy and the slides must be read by a pathologist who is familiar with material of this type. Subtle, but important changes may be present, which are easily overlooked if the pathologist is familiar only with the renal changes seen in post-mortem material.

The number of complications attributable to the biopsy was small in our series (Table 4). No surgical intervention was required and no deaths occurred as a result of the biopsy. Microscopic hematuria is usually present. Gross hematuria occurred in five patients but persisted for only a few hours in four of them. One patient passed clots of blood for three days. He suffered from severe chronic glomerulonephritis with uremia and died one month after the biopsy. At autopsy no abnormalities resulting from the kidney biopsy could be found. Perirenal hematomas occurred in three patients and in one a blood transfusion was necessary when fall in blood pressure occurred forty-eight hours after the biopsy. All of the patients recovered completely without demonstrable residual damage. In two patients there was a transient blood pressure drop, associated with weakness, sweating, abdominal pains, nausea and vomiting. Both patients were markedly apprehensive prior to the biopsy, despite sedation. There was no change in the hematocrit, urine or subsequent renal status. Two patients had prolonged pain at the biopsy site and one had both pain and fever. Bleeding could never be demonstrated in these cases, and all recovered completely. Acute pyelonephritis developed in two patients but we do not know whether this could be attributed directly to the biopsy procedure. In one of these, signs and symptoms of the acute infection occurred one week after the biopsy. The specimen showed evidence of chronic pyelonephritis, and it is possible that the pre-existing infection may have been activated by the biopsy procedure. In the second patient the biopsy showed no evi-

TABLE 4.
COMPLICATIONS

(401 Kidney biopsy attempts)	
Gross Hematuria	5
Perirenal Hematoma	3*
Transient blood pressure fall	2
Post-Biopsy Pain	2
Fever with flank pain	1
Pyelonephritis	2
Deaths	0
TOTAL	15

* Blood transfusion in 1 case

dence of pyelonephritis yet acute pyelonephritis developed two weeks later. Both patients responded to antibiotic treatment. A thorough examination of the kidneys of 22 patients who subsequently came to autopsy failed to reveal any abnormalities that could be attributed to the biopsy.

IV. Clinical Value and Indications

The renal biopsy correlates well with autopsy tissue in the diffuse types of kidney disease such as glomerulonephritis, diabetic glomerulosclerosis, nephrosclerosis, lupus nephritis and other medical diseases of the kidney.[4, 5, 7-12] Renal biopsies have proved to be particularly valuable in following the natural course of the disease.

TABLE 5.
VALUE OF KIDNEY BIOPSY

1.	Histological diagnosis
2.	Study of the progressive changes in kidney diseases
3.	Prognosis
4.	Evaluation of therapy
5.	Culture of biopsy specimen
6.	Special studies
	a. Electron microscope
	b. Histochemistry
	c. Nephron dissection

Table 5 summarizes the aims of the renal biopsy as a diagnostic, therapeutic and research tool. Table 6 lists some of the conditions in which renal biopsy is indicated or in which it has proved to be helpful. One of its principal uses is in the diagnosis and management of patients with the nephrotic syndrome. This syndrome may develop in a variety of different disorders and without biopsy it is often impossible to identify the underlying primary disease.[13-17] Renal biopsy not only provides a specific pathologic diagnosis in most instances but also permits the physician to follow the effects of therapy.

When the nephrotic syndrome is associated with primary renal disease, we have observed the following five histological pictures:

(1) membranous glomerulonephritis

(2) proliferative glomerulonephritis

TABLE 6.
INDICATIONS FOR KIDNEY BIOPSY

1.	Nephrotic syndrome
2.	Idiopathic proteinuria
3.	Renal disease of unknown type or etiology
4.	Selected cases of acute renal failure
5.	Selected cases of acute glomerulonephritis
6.	Selected cases of hypertension: benign & malignant
7.	Collagen diseases, especially systemic lupus erythematosus
8.	Selected cases of pyelonephritis
9.	Selected cases of renal disease associated with diabetes mellitus, sarcoidosis, amyloidosis, toxemia of pregnancy, multiple myeloma

(3) membranous and proliferative glomerulonephritis

(4) chronic sclerosing glomerulonephritis

(5) minimal or indeterminate changes, including "lipoid nephrosis"

The clinical course and response to steroids or other therapy in the nephrotic syndrome is extremely variable. In our experience complete remissions of the nephrotic syndrome following steroid therapy have occurred only in those instances where the biopsy showed proliferative glomerulonephritis or indeterminate changes in the glomeruli. Patients with other glomerulur lesions, such as membranous glomerulonephritis failed to respond or showed only a partial remission. Thus, the renal biopsy proved useful in predicting which patients were likely to respond well to steroids. Renal biopsy is also of value in diagnosing other causes of the nephrotic syndrome such as diabetic glomerulosclerosis, amyloidosis, and systemic lupus erythematosis.

Case E. J. This 61 year old Negro female had been followed elsewhere for two years with a clinical diagnosis of congestive heart failure, based mainly on the presence of severe edema. Massive proteinuria was present together with low serum albumin, elevated serum cholesterol and decreased renal function. A diagnosis of the nephrotic syndrome was made and a percutaneous renal biopsy revealed the presence of amyloidosis with severe glomerular involvement (Figure 3). This apparently represents the primary form of renal amyloidosis which often results in the nephrotic syndrome but which is difficult to diagnose without renal biopsy.

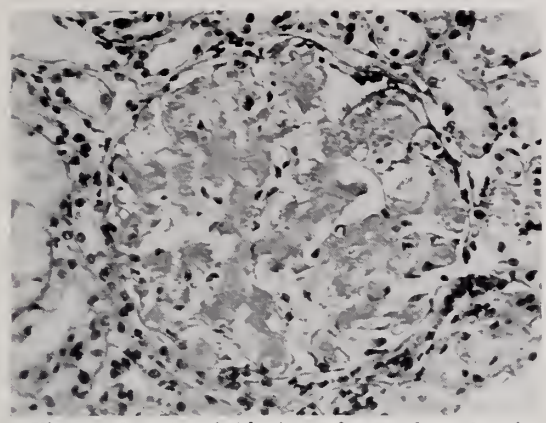


Figure 3. Amyloidosis: glomerulus showing extensive involvement.

The diagnosis of a nephrotic syndrome can easily be missed, especially in elderly patients in whom congestive heart failure may also be present. This case illustrates the value of performing biopsies in any case of unexplained or persistent proteinuria. The renal biopsy is helpful in establishing a specific diagnosis, as well as in prognosis and therapy.[18] Representative examples are also seen in the following case reports:

Case C. S. A 28 year old white female was first told she had proteinuria in 1957. Subsequently, because of flank pains she was treated for pyelonephritis. However, the proteinuria persisted after she became completely asymptomatic. Three years later her physical examination was normal, but renal studies disclosed a protein excretion of 1.8 grams per 24 hours, microscopic hematuria, increased numbers of red cells, white cells and casts on Addis count together with normal renal function tests. There was a slight elevation of the serum cholesterol and a normal serum albumin. A renal biopsy disclosed a severe membranous glomerulonephritis (Figure 4). She had been followed for six months and has remained asymptomatic. She has not received steroids.

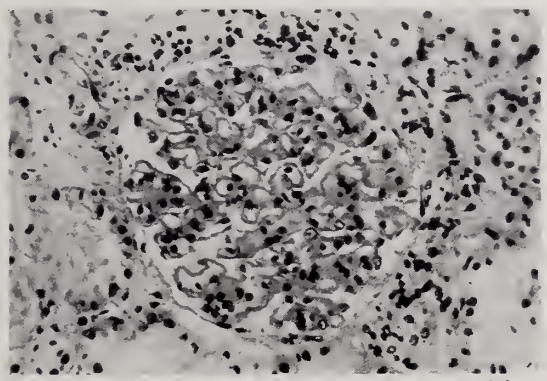


Figure 4. Membranous glomerulonephritis.

Case J. O. A 12 year old white male was referred to the clinic because proteinuria was found in the course of a routine examination for admission to the Boy Scouts. Physical examination was negative, but the proteinuria persisted. Microscopic hematuria was also present. Renal function studies were normal. A renal biopsy disclosed membranous glomerulonephritis of slight degree. He failed to respond to steroid therapy, but serial renal function studies and biopsies showed no progression of the lesion during the past two years.

The renal biopsy is also of value in acute glomerulonephritis, not only for accurate assessment of the glomerular damage, but also in the study of the natural history of this disease.[19, 20] Occasionally the biopsy may reveal that a case diagnosed clinically as acute nephritis is an acute exacerbation of previously unsuspected chronic glomerulonephritis, thus altering the prognosis significantly. Biopsy may be of equal value in ruling out the presence of chronic disease as is illustrated in the following case:

Case G. L. This 15 year old white male was hospitalized in 1958 with signs, symptoms and laboratory findings of acute glomerulonephritis developing two weeks after a sore throat. At the age of 6 he had been hospitalized with a diagnosis of acute glomerulonephritis. There had been no follow-up in the interim period. It was assumed that the recent episode was an acute exacerbation of chronic glomerulonephritis. However, a renal biopsy disclosed acute proliferative glomerulonephritis with no evidence of chronic disease (figure 5). He recovered completely and serial renal function studies and renal biopsies during the following three years have been normal. This boy has been permitted

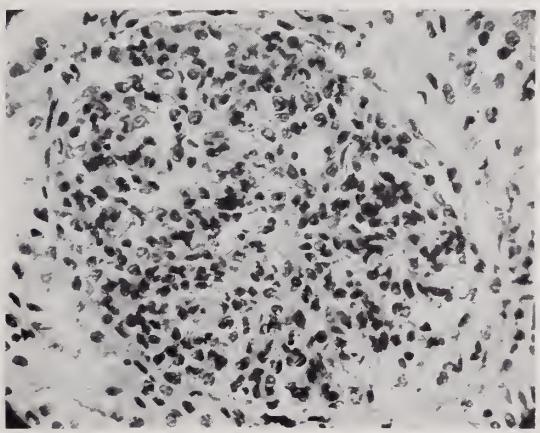


Figure 5. Acute proliferative glomerulonephritis.

to lead a completely normal life without the restriction which might have been ordered had it not been for renal biopsy findings.

Discussion

In cases of acute renal failure, renal biopsy has been helpful in the selection of patients for treatment with the artificial kidney.[9] Dialysis is seldom indicated if there is an irreversible form of acute renal disease or if chronic, terminal renal disease is present.

In selected patients with acute and chronic pyelonephritis renal biopsy may be indicated. In addition to the histological studies cultures can be taken from the needle or the specimen. This is especially valuable when the urine cultures are negative. The severity of renal damage and the response to therapy can be estimated although the reliability of such judgments is limited by the focal character of the disease and the small size of the biopsy specimen. The natural history of pyelonephritis, especially in its relationship to hypertension may be followed by serial biopsies of the kidney. In several patients with hypertension, in which renal biopsy was used as part of the diagnostic work-up, unsuspected pyelonephritis was disclosed. In such cases, long-term antibiotic therapy may relieve the hypertension and prevent progressive kidney destruction.

The renal biopsy has also proved valuable in the diagnosis and management of collagen diseases, especially systemic lupus erythematosus. Lupus nephritis generally carries a poor prognosis, but recent studies indicate that prolonged, high-dosage steroid therapy may halt or reverse the process in some patients.[21] Since nephritis may develop in patients with lupus in the absence of any abnormalities in renal function tests or in the composition of the urine it would probably be wise to perform renal biopsy in all patients with systemic lupus erythematosus.

The value of kidney biopsies is now under investigation in other conditions, including the renal disorders associated with toxemias of pregnancy, diabetes mellitus, sarcoidosis, gout and multiple myeloma. The combined use of standard biopsy with electron microscopy and histochemistry are new methods of investigation which may help to resolve many of the perplexing problems that now exist in the clinical detection, classification and management of renal diseases.

Summary

Since 1954 we have attempted a total of 401 percutaneous renal biopsies on 247 patients. Renal tissue was obtained in 84 per cent and a diagnosis established in 75 per cent. Minor complications occurred in 4 percent. No surgical intervention was necessary in any case and no deaths were attributable to the biopsy.

The biopsy is performed in the prone position using the Franklin modification of the Vim-Silverman needle. Prior to the biopsy an intravenous pyelogram is obtained in order to determine that both kidneys are present. A hemorrhagic diathesis must also be ruled out. The biopsy is contraindicated if the kidney cannot be adequately visualized by x-ray or if they are in abnormal position, if a hemorrhagic diathesis exists or if the patient is uncooperative.

The renal biopsy is of value in obtaining a histological diagnosis, studying the natural history of renal disease, prognosis, evaluation of therapy and as a valuable research tool, especially in combination with histochemical and electron microscope studies. It should be part of the standard diagnostic procedures in selected renal diseases, especially the nephrotic syndrome, idiopathic proteinuria, systemic lupus erythematosus and acute renal failure of unknown etiology.

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No Drug Breakthroughs in USSR

A couple of years ago I spent a good deal of time with a Russian mission representing the drug industry, including a Mr. Natradze who, I understand, is or was the head of the whole Russian pharmaceutical operation. From him I learned about the Soviet system, and it *does* supply medicine for the sick. But in the 40-odd years of its existence the Soviet Union—despite its achievements in space—has not produced a single important pharmaceutical breakthrough.—*The Generic Fallacy:* Francis Boyer, Chairman of the Board, Smith, Kline & French Laboratories.

Percutaneous Selective Angiography

• A method of angiography is described which offers more flexibility and greater safety than those which involve puncture of the aorta.

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PROGRESS in surgical treatment of diseases of the aorta and its branches has emphasized the need for accurate diagnostic arteriography. Whereas numerous series of aortograms have been made by direct puncture (Beall, Morris, Crawford et al),[1] the percutaneous femoral artery retrograde-catheter technic originally described by Seldinger[2] in 1953 appears to offer greater safety, wider applicability, and, at the same time, preciseness. This method has been used extensively throughout the Scandinavian countries (Odman),[3] as well as other European countries. Modification of the method has permitted satisfactory opacification of the left ventricle, aortic arch and its branches, and the coronary arteries with minimal risk. The fact that the wide range of diagnostic possibilities of this method has not been fully appreciated in the United States prompted me to outline my experience with patients examined by the Seldinger technic.

During the past three years, 82 patients on private service have had arteriography performed by the catheter technic. There were 66 males and 16 females ranging in age from 20 to 86 years. Visualization of the thoracic aorta and its branches was performed in 10 individuals, the upper abdominal aorta, renal arteries and mesenteric arteries in 5, the aortic iliac area in 43, the femero-popliteal arteries in 22, and the left side of the heart and proximal ascending aorta in two cases.

Technic

Catheterization is performed with the patient lying supine on the x-ray table. In extremely obese patients, or in those in whom difficulty is experienced in puncturing the artery immediately, arteriotomy may be performed. In only two instances were difficulties encountered in passing the guide and catheter into the artery. In these two, the attempts were abandoned and the lumbar approach utilized. In most instances, direct puncture of the femoral artery is possible (Fig. 1). Originally, a local anesthetic was used, but because of the unpleasant burning pain in the abdomen and extremities experienced by most patients, especially those with extensive occlusive disease, sodium pentothal general anesthesia is now preferred. Despite previous warnings to this effect, movement during exposure is often unavoidable if a local anesthetic is used. I, therefore, prefer a general or spinal anesthetic, which is easily controlled with the patient in the supine position.

The femoral artery is punctured with a number 16 gage needle. After the obturator is removed and unimpeded pulsatile flow is assured, a flexible-tipped guide wire is threaded into the artery and passed for approximately 10 centimeters. The needle is then removed, and a number 206 polythene catheter or special radiopaque catheter is introduced over the guide wire with a steady, continuous, boring pressure. The catheter and stylus are introduced together to the desired level as determined by fluoroscopic examination or scout films. The guide wire is slowly and carefully removed, and the catheter is left in the vessel. Brisk bleeding from the tip should occur. A Luer Lok catheter adapter is attached, and a long plastic tube is connected to the syringe. This enables the examiner to stand at a distance from the x-ray beam. Injection of

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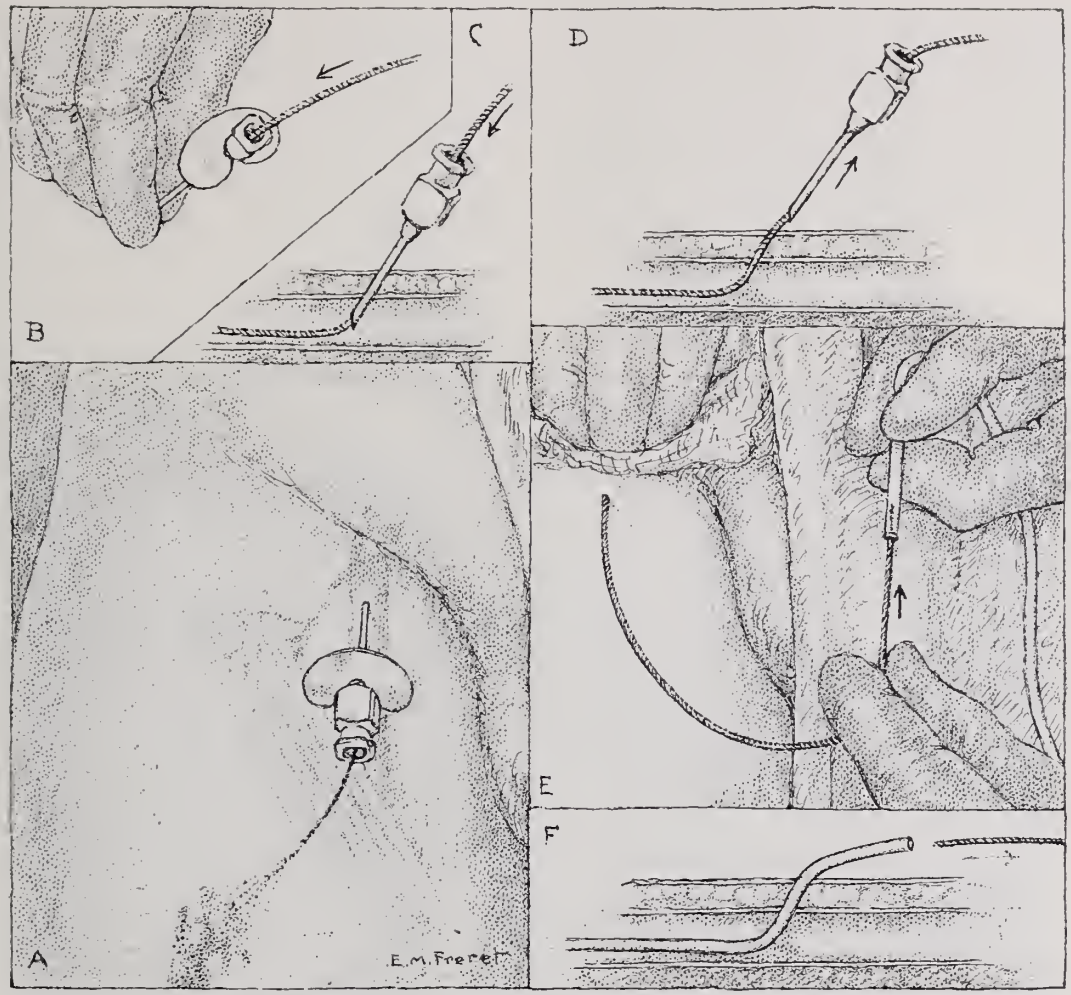


Figure 1.—Diagram showing essential stages of the retrograde catheter technic.

two to three cubic centimeters of radiopaque material serves, not only as an additional sensitivity test, but also as a means of identifying the position of the catheter. It is advisable to flush the entire system continuously with small amounts of heparinized saline solution to prevent clotting. Convenient for this purpose is an infusion bottle containing 15 to 20 milligrams of heparin per liter of saline or glucose in water and elevated to a height sufficient to ensure flow against arterial pressure.

The choice of radiopaque material to be used is an individual matter; solution of 76% Renographin®, 50% Hypaque®, and 70% Urokon® all offer excellent visualization. Higher concentrations of dye may be used for specific instances but are generally not necessary. Most injections of 30 cubic centimeters of contrast medium can be performed by hand, and satisfactory pictures of the mesenteric, renal, or distal aorta and its branches may be obtained. However, for more proximal aortic visualization, where the length of the arterial catheter becomes a factor, a power injector delivers 30 to 40 cubic centimeters of contrast material under pressure more satisfactorily.

The patient is lying on a specially constructed cassette holder which supports four 36 inch cassettes. Proper exposure of all four cassettes is possible. Length of roentgenographic exposure, height of the tube above the table, amperage and kilovoltage are adjusted according to the size of the patient and particular arteries concerned.

After satisfactory pictures have been

obtained, the catheter is removed slowly and the finger is placed firmly over the wound for at least 10 to 15 minutes. An intravenous infusion should be continued to ensure adequate renal flow. Low molecular weight Dextran® has been reported to be effective in preventing renal damage.[4]

Advantages

This method has decided advantages. It permits injection of the contrast medium into a vessel at any desired level, making it possible to use smaller amounts of contrast material. The patient may be placed in any position desired so that lateral projection views, as for the superior mesenteric artery, may be made. The risk of extravasation is minimal. The catheter may be left in place to permit re-examination if necessary. Excellent arterial opacification and detail are usually obtained with minimal amounts of selectively placed contrast medium. Movement of the patient during or after injection no longer presents a dangerous situation.



Figure 2.—Scout film showing position of catheter prior to injection of contrast medium.

Complications

The reported incidence of complications has been low. Among the more than 80 patients in this series, there were no deaths or serious complications. A hematoma always develops at the site of the puncture, but this is easily controlled with pressure. Rest in bed for six to ten hours after completion of the procedure is advisable for the patient. If the catheter tip is not assuredly within the lumen of the vessel, dissection of the wall can occur. Other hazards include dislodging a plaque or causing formation of thrombi at the site of puncture. As a safeguard against these hazards, movement of the guide wire must be free and easy and pulsatile flow from the tip of the catheter excellent. Acute renal artery obstruction and thrombosis of the mesenteric artery with resulting gangrene have sometimes been reported after injection of large amounts of



Figure 3.—Aorto-iliac-femoral visualization showing site and degree of obstruction and collateral circulation.

concentrated contrast material into the lumen of the particular vessel. The possibility of allergic reaction to the contrast medium is naturally always present, and a sensitivity test should be performed before injection of the main bolus. These latter hazards are obviated if small amounts of safe concentrations are used and care is taken not to repeat the injections at short intervals, especially into the renal vessels, as the tolerance of the kidney to contrast material varies widely.

Discussion

The percutaneous femoral artery retrograde-catheter technic of Seldinger not only is safe, but also provides a high incidence of accurate diagnostic results. It has wide applicability, being the most adequate method for arteriographic demonstration of the entire arterial tree. The most frequent indication for arteriography is degenerative arterial disease associated with partial or complete occlusion. Whereas, originally, the terminal



Figure 4.—High abdominal aortic visualization showing excellent opacification of coeliac axis and renal arteries.

aorta and its more peripheral branches were most frequently studied, today the entire aortic tree, from the coronaries to the popliteal vessels, "around the world" visualization is frequently indicated, as successful application of vascular reconstructive procedures by grafts or endarterectomy is dependent on such visualization. A further hitherto unconcentrated area for retrograde aortography is study of the left ventricle, its valves, and proximal aorta.[5, 6] This method has become the procedure of choice when simultaneous visualization of the vertebral, carotid, and subclavian arteries is desired. When Renographin® or Hypaque® have been used, I have encountered no damage to the brain or other reported serious complications.

Summary

Eighty-two patients have had arteriography performed using the retrograde catheterization technic of Seldinger. No deaths or serious complications were encountered. The details, advantages and hazards of the method have been outlined.

The author feels that this method permits excellent visualization of the entire aorta and its branches to be performed with safety and preciseness.

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Foreign Drugs for Soldiers and Veterans

The Military Medical Supply Agency and the Veterans' Administration have sent millions of the taxpayers' dollars overseas to purchase cheap, pirated versions of powerful drugs discovered by U. S. companies and presumably protected by U. S. patents. This practice was deservedly denounced by American labor when the Oil, Chemical, Atomic Workers International Union passed a resolution strongly condemning it. When the government goes shopping, the taxpayer has a right to expect that it will spend his money wisely, for a good purpose and for the general welfare of the country.—U. S. Senator Hugh Scott in 87th Congress.

Response to Librium* in Individuals With a Propensity for Addiction
A Pilot Study

• The administration of large doses of Librium to 25 alcoholic patients for fourteen days was not observed to produce evidence of addiction to the drug.

GEORGE W. BURKE, M. D.
CHARLES W. G. ANDERSON, M. A.
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IT has been suggested that some individuals may have a propensity for addiction regardless of the chemical characteristics of the intoxicant. This is not surprising when one considers that despite radical differences in the personality structure of individuals addicted to either alcohol or drugs (they run the gamut from near-normal to acutely schizophrenic), they all exhibit similar psychodynamic predispositions, i.e. low tolerance to pain, stress and tension, emotional immaturity, insecurity, and a strong sense of dependency.[1-5] Consequently, when confronted by even minimal degrees of anxiety or frustration they are easily overwhelmed, and in their search for relief they will turn to any intoxicant which can offer release, the actual choice of agent being determined not by any regard for the chemical nature of the intoxicant, but by such factors as cultural background, individual metabolic idiosyncrasies, urgency of need, and availability of agent.[6-7]

Alcoholics May Show Propensity for Addiction

Furthermore, it has been indicated that alcohol, like narcotic drugs, will produce a real physical dependency.[8] Often this physical craving can be somewhat satisfied by any intoxicating agent, provided it can produce the desired physical and psychologic reaction. Thus, it is not unusual to note in the histories of addicts incidents of heavy drinking and incipient alcoholism prior to drug addiction, as well as prolonged drinking sprees in already habituated persons deprived of their favorite drug. Similarly, alcoholics have been known to resort to drugs, "pep" pills, chloroform and other sedatives, hypnotics and the like as substitutes for alcohol, and not a few have become addicted to barbiturates while under treatment for acute alcoholism.[8-11]

This propensity for addiction with interchange in the use of intoxicating agents is an important factor in any treatment of alcoholism which involves the use of sedatives or psychotropic drugs. While these agents may be useful in managing anxiety, tremors, and insomnia associated with withdrawal symptoms, their usefulness will be limited if they are in any way habituating. The danger of inducing new addiction is further increased if such a drug is used adjunctively during long periods of attempted rehabilitation. Therefore, coincident with the introduction of any drug which may be useful in the treatment of alcoholism, there should be some determination of its habituating potential.

A relatively new psychotropic drug which holds great promise in the treatment of alcoholism is Librium. Aside from its effectiveness in the management of various psychiatric and psychosomatic conditions,[12-15] it has been useful in acute and chronic alcoholism,[16-17] not only as a quieting agent during withdrawal periods,[16] but as maintenance therapy in pa-

* Tradename for chlordiazepoxide, Hoffman-La Roche Inc., Nutley, New Jersey.

tients attempting rehabilitation.[17] To date, there have been no reports of habituation or addiction to Librium. However, there are some indications that at excessively high dosages over a protracted period some habituation may occur. With this in mind, we initiated a study to determine the presence of addictive or habituating potential of Librium when used in patients under treatment for alcoholism.

Material and Methods

Librium was administered to 25 male adults hospitalized at the East Louisiana State Hospital for alcoholism and seen at the hospital's Alcoholic Treatment Service. The men were from 28 to 64 years of age whose education ranged from no schooling to a college degree. Besides alcoholism their diagnosis included acute brain syndrome, chronic brain syndrome, sociopathic personality disturbance, chronic undifferentiated schizophrenic reaction, and schizoid personality. Each patient had volunteered to take the drug and had signed an agreement to remain in the institution for the entire length of the study.

Five days prior to the administration of Librium all medication was discontinued with the exception of vitamins. The men then started on Librium, 50 mg. t.i.d. If there were any signs of lethargy at these doses the daily intake was reduced, but at no time was the minimal dose less than 75 mg. per day. In all but one patient adjunctive medication was limited to vitamins, the one exception being a man with acute asthma who also received symptomatic therapy for that condition.

The men were maintained on therapy for 14 days after which the drug was abruptly withdrawn. For 7 days after the withdrawal of Librium the patients were carefully checked for gastric disturbances, cramps, tics, vertigo, psychotic behavior and other physical and psychic complaints which might indicate withdrawal symptoms. In addition, each man was interviewed regularly to determine any subjective complaints they may have had, and to offer them an opportunity to verbalize their feelings concerning the drug.

Results

Absolutely no signs of dependency were seen in the patients while under Librium medication. There were no psychic complaints and, with the exception of the patient with asthma, no physical complaints. On the contrary, most of the men appeared to be doing very well, and they often remarked on how well they felt, physically and mentally. After withdrawal of the drug, there were no indications of withdrawal symptoms despite the high dosages used (75 to 150 mg. per day). During the follow-up period patients' mental and physical status remained good considering their underlying chronic pathology without the slightest evidence of even psychological dependency.

In the patient interviews the men expressed a great deal of interest in the drug. Many of those who had previous experience with tranquilizers showed a preference for Librium, stating that it made them feel more relaxed and less anxious without producing over-sedation. One feature which seemed especially impressive to the individual subjects was the disappearance of insomnia. Most felt that sleep came more easily and was less fitful, and they were very pleased at the absence of drowsiness and grogginess upon awakening.

The sole side effects noted — lethargy and excessive but not deep sleep — occurred only at the maximal doses and were minimized with the reduction of daily doses.

Discussion

Time was a significant limiting factor in this study. It was highly impractical, if not impossible, to keep all the patients hospitalized for a longer period, and the continuation of the study with some of the subjects on an out-patient basis was impractical since it would not be possible to maintain a carefully controlled environment.

On the other hand, the patients under investigation, while not numerous, were

fairly representative of those under treatment for alcoholism today. They encompassed a wide age and educational range, and included men with well established psychic and organic degeneration. Furthermore, we followed the assumption that if addictive or habituating properties were inherent in the drug they would evidence themselves in some way, if at all, within 2 weeks of constant high dosages in persons with a proveness to addiction.

Thus, in spite of the small series of patients and the limited duration of therapy, the failure of the subjects to exhibit addictive behavior or develop withdrawal symptoms may be considered as tentative evidence of the lack of habituating properties of Librium. Moreover, coupled with the absence of toxicity and disabling side effects, such presumptive evidence suggests that Librium may be useful in outpatient situations aimed at rehabilitation of alcoholics.

Although the results of this study must be considered tentative, they are very encouraging, and indicate the need for further investigation along these lines.

Summary

Librium was administered to 25 patients hospitalized at the East Louisiana State Hospital for alcoholism to determine the presence of addictive or habituating qualities of the drug. The patients were maintained on 75 to 150 mg. per day for 2 weeks, after which the drug was abruptly withdrawn. For the following 7 days the subjects were checked carefully for any objective or subjective signs of withdrawal symptoms. The results showed no sign of addiction or habituation in the patients treated. Moreover, there were no adverse reactions or side effects other than lethargy which was minimized by a reduction in the daily dose. It is suggested that Librium, apparently a non-habituating agent, can be used in the treatment of alcoholism in both in and out-patient settings. Further investigation along these lines is recommended.

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Editorial

Pyelonephritis

Pyelonephritis is a disease which may progress unsuspected over a period of years and may elude detection even if suspected. It was described 80 years ago and recognized as a clinical entity. Further understanding and delineation of this disease process has revealed that probably less than half of the existing cases are diagnosed clinically but at postmortem it is found in 10 to 20 per cent of all autopsies and considered as a major cause of death in about one-third of these.

Pyelonephritis may be defined "as the pathological alterations which occur subsequent to the multiplication of pathogenic bacteria in the renal parenchyma and the pelvocalyceal system."

Investigations of the normal and pathogenic bacteriology of the genitourinary tract have brought a growing interest in this field. Such studies have shown the prevalence and insidious character of significant infection of the urinary tract. Pyelonephritis may exist without any symptoms at all and go through various periods of activity and latency or it may exist with symptoms not readily recognized as related to a urinary infection. In such a case the symptoms may be gastrointestinal rather than genitourinary. It may also exist without the discovery of pyuria in several specimens of urine. In a series reported [1] only 104 of 629 cases of significant, acute or chronic pyelonephritis were diagnosed antimortem.

The typical symptoms of acute pyelonephritis with an acute onset, chills, fever, flank pain and tenderness, lower urinary tract symptoms and pyuria point readily to a correct diagnosis. It is found, however, that the "asymptomatic" and atypical cases far outnumber those with classical signs and symptoms. There may be a severe constitutional reaction with or without genitourinary symptoms but without fever. Gastrointestinal symptoms may appear with atypical pain patterns. The complaints may be with reference to

[1] Medicine, Volume 39, No. 1, page 56.

the lower urinary tract only. There may be negative findings in the urinary sediment on frequent occasions. Severe increase or pre-existing hypertension may occur. Heavy quantitative proteinuria simulating acute glomerulonephritis may be found. Predominant urinary findings may be those of macroscopic or microscopic hematuria. The fulminating septic course with acute renal shutdown may develop. Atypical necrotizing papillitis may be found. The condition may complicate any other renal disorder.

As the acute phase of the pathological process subsides intrarenal infection may continue and persist with or without acute exacerbations. The syndrome of chronic pyelonephritis then exists. Any abnormality in the urinary tract may contribute to the persistence of the infection. Progressive destruction of the renal parenchyma may occur. This may be followed by various syndromes of renal insufficiency and hypertensive vascular disease. Years may pass during which the patient is unaware of the slow march of this progressive disorder. Suspicion as to its existence may develop only as the result of careful and detailed past history. Nonspecific symptoms such as lassitude, malaise, headache, anorexia, nausea and weakness have been described in these patients. These symptoms are most often due to fever, anemia, vascular disease or uremia but in one series reported the cause was infection in one-fourth. Primary atrophic pyelonephritis is the most asymptomatic form of the disease. Some, however, have recurrent attacks of cystitis, attacks of "colic" intermingled with bouts of typical acute pyelonephritis. As the disease advances the blood pressure increases. The retina, however, is not expected to show changes until the disease is far advanced or has actually reached the terminal stage.

Defects in the conservation of salt and water are frequent. The symptoms they produce may be the first indication of a renal disorder. First, polyuria and then hyposthenuria with nocturnal diuresis are frequently related symptoms. Diagnosis depends on an awareness of the frequency and vagaries of this disorder, on a knowledge of the natural history of the unusual clinical manifestations and on the proper performance and understanding of those laboratory procedures which would be constructive in making a diagnosis.

Of great importance is the examination of the urine. This must be examined within a half hour after voiding and must be a specimen obtained after due precaution for cleansing of the external genitalia and arrangements made for securing a clean midstream specimen voided into a sterile container. A specimen voided on arising is preferred because it will have the most uniform concentration and lowest pH. If the first specimen is unobtainable, one collected during the first hour and a half after arising should be used. The presence of leucocytes or pus cell casts or the very coarsely granular casts are of great significance. The latter is the degenerative stage of "poly casts" that appears in the urine. The presence of bacteria observed on the stained slide or obtained in culture is of great significance. Bacteria may be found in normal urine. It is generally considered that the existence of 100,000 or more/ml is regarded to be significant bacteruria. Not every patient with significant bacteruria has pyelonephritis. There is, however, a close association of significant bacteruria with renal infection. When the former is critically established it justifies a higher index of suspicion that renal involvement does exist or is likely to occur.

It has been stated that 30 per cent of patients with chronic urinary tract infections have bacteruria without pyuria. In the absence of a culture a portion of fresh, cleanly collected, uncentrifuged urine may be dried on a slide and stained. In such an examination it has been stated that organisms are generally seen in 80 to 95 per cent of the specimens, when colony counts are 100,000 or more/ml but no organisms are found when the counts are less than 1,000. Thirty-five per cent have no proteinuria. Over 20 per cent have no pyuria. Even when infection is

active bacteria may not appear in sufficient numbers to establish a final diagnosis. This makes repeated examinations necessary.

The differential diagnosis concludes all those urinary disorders which might be accompanied by the constitutional symptoms together with pyuria, hematuria, proteinuria, bacteruria, polyuria, hyposthenuria, polydipsia, nocturia, leucocyte casts and later uremia and hypertension. The suspicion would be strongest in the situation where there is fever, bacteruria with the intermittent appearance of pyuria and leucocyte casts. When the suspicion of pyelonephritis is raised a urological survey including cysto and retrograde pyelograms with differential cultures is in order. The treatment is to place the patient in as favorable a condition of health otherwise; as circumstances will permit, and to utilize urinary antiseptics. Acidification, broad spectrum antibiotics, nitrofurantoin and some sulfonamides are recommended. All have their partial successes as well as their disadvantages. At present it may be said that in spite of intensive investigation a suitable treatment is yet to be found.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

KEEP AMERICAN MEDICINE FREE

Our newsletter for February is printed in red to more impressively remind our members of the grave situation which would be created for our aged people and the medical profession, should the King H.R. Bill 4222 and the Senate Bill 909 pass the House and Senate and be implemented under the Social Security system in Washington.

The members of Congress are being strongly pressured to pass the King Bill 4222, which, if passed, would give us socialized medicine instead of a free system of American medicine with free choice of patient and doctor, thus retaining that voluntary relationship so essential and now existing in our present system of medicine. The King Anderson Bills would be completely compulsory for patient and doctor, alike.

President Kennedy and other good wishers and "give awayers" are making a determined effort to force these socialistic measures on our people. This smacks of political expediency.

The following questions and answers should be helpful in interpreting the King Bill H.R. 4222. The Senate Bill 909 is a duplicate of House Bill 4222.

1. *Question:* Are there many aged individuals who cannot or will not purchase adequate health protection?

Answer: Clearly not. The 1961 Census Report shows that the median income of family units where the head of the family was 65 and over and working was more than $5,300. These family units usually constitute an elderly couple with no children to support — the point being that $5,300 a year is not a poverty level income for a family of two.

Ten million senior citizens today are drawing Social Security benefits and ¾ of these own their own homes, of which 9 out of 10 are mortgage-free. A 1957 Social Security survey showed that over 45% of this group had a net worth of $10,000 or more.

In 1952 only 26% of the aged were insured under voluntary health insurance plans (about 3,000,000 people). Today 53% of our citizens over 65 have voluntary coverage. The figure has doubled in less than nine years. Soon, more senior citizens who are medically needy will be receiving benefits under the Kerr-Mills law.

Voluntary insurance can do the job and is doing the job of protecting the health of our senior citizens.

2. *Question:* Would Medicare protection under Social Security be a bargain?

Answer: Hardly. Like most other things today "you get what you pay for". In 1962 if you earn $4,800 a year you will pay a Social Security tax of $150 ($225 for the self-employed). By 1968

you will be paying $222 a year—*if* no added benefits are passed by Congress in the meantime.

Under the Medicare bill now before Congress your Social Security tax could hit $253—over a 70% increase in 7 years and this is based on conservative cost estimates. Of course, this would be just the beginning. As former Congressman Forand said in January 1961—"If we can only break through and get our foot inside the door, then we can expand the program after that."

Does all this sound like a *bargain*—especially in view of the fact that you must be over 65 to collect any of these added Medicare benefits?

3. *Question:* Would participation in this program be voluntary?

Answer: No. Every citizen working in an occupation covered by Social Security — and this means just about all of us—would be required by law to participate and pay taxes for Medicare coverage.

4. *Question:* Would there be a choice of particular benefits over other benefits, as in voluntary plans?

Answer: No. Benefits would be fixed and standardized for each and every person over 65. You would not be free to choose more surgical benefits, or to put extra emphasis on nursing care, or added hospital or home coverage. In short, you would be forced to buy the government's own plan—like it or not.

Interestingly enough, Congress has even given federal Civil Service employees this basic freedom to choose benefits under the government's own health insurance plan!

5. *Question:* Would the quality of Medicare be enhanced by such a system?

Answer: Decidedly not, judging by the experience of others who have tried it.

Medicine in Britain is a government proposition and, as a result, is bogged down in red tape and inefficiency. For example there is a three year wait for non-elective surgery. The British plan costs *five* times more than original estimates. There are *three* medical *clerks* for every *doctor*. On an equivalent basis here the U. S. government would have to hire nearly 2,000,000 more clerks!

Dr. E. Lloyd Dawe, an *ex*-British doctor, has described the waste and regimentation of their system, with young patients having to wait a whole year for chronic tonsilitis operations.

Prof. Norman Morris of London's Charing Cross Hospital describes British maternity facilities as "mere baby factories, lacking all humanity."

Our voluntary system of medical care is the best in the world—without government intrusion. Medicare for the aged under Social Security would be the first step along the road to a tragic duplication of Britain's mistake.

6. *Question:* Would this system interfere with the free choice of physicians?

Answer: Yes. Although proponents of this measure have gone to great lengths to convince the public that no federal control over the practice of medicine would result, the bill (H.R. 4222) itself lists doctors working in hospitals who are included in the plan. The bill also requires hospitals to meet conditions if they wish to participate. These conditions are to be fixed, *not by doctors,* but by the Secretary of Health, Education and Welfare.

7. *Question:* Would the plan be a "giveaway" to a favored group?

Answer: Yes—to every member of Social Security over the age of 65, if and when the bill is passed. These people would receive benefits without having contributed a nickel to the added costs involved. The entire tab for this favored group would be picked up by the present and future generations of young workers.

8. *Question:* Has Congress established any medical care plans for those oldsters who *are* in real need?

Answer: Yes. In addition to the long-standing assistance program for the needy aged on relief, Congress last year founded a program for those senior citizens *temporarily* burdened with medical problems. This is the Kerr-Mills program under which the states and the federal government pool monies to provide medical help for the medically-needy aged.

Under this plan the government's share of the cost can be as much as 80%. The scope of care is broad and includes, for example, hospital services, nursing home and surgical services, home care, doctors and nurses services, dental care, eyeglasses and medicines.

This program gives help—but only where it is really *needed.*

9. *Question:* Is there any accurate method of estimating the ultimate cost of the program?

Answer: No—only time would tell. Present Social Security benefits are paid in cash based on past earnings. However, Medicare benefits are service-type, we-pay-your-bill benefits and no one really knows what they will cost despite so-called "expert" guesstimates. Cost will depend on the number of oldsters who request treatment and the variety and type of ailments treated.

One thing is certain. The cost will be great.

10. *Question:* Would the program help those most needy—the aged on the public assistance rolls?

Answer: Oddly enough—no. In order to be eligible for benefits a senior citizen would have to qualify under the Social Security system. However, only about one quarter of the 2,318,000 senior citizens on public assistance rolls do so qualify. Only about 600,000 of this needy group are in a position to be helped if the present proposal becomes law.

In short, we would have a program which, while forcing help on those who do not want or need it, would ignore those in greatest need.

Write your Senators and Congressmen immediately, requesting them to vote against these bills and send copies to Honorable Wilbur D. Mills, Chairman of the Ways & Means Committee, House Office Building, Washington 25, D. C.

LOUISIANA STATE MEDICAL SOCIETY SPONSORS OWN PLAN OF LIFE INSURANCE

Mr. H. G. Lyman with Emery & Kaufman, Ltd., 314 Camp Street, New Orleans who sponsors our Society's insurance plan has the following to say about an additional policy offered our members. We believe the members of our Society will be interested in such a program since this policy is different and gives the entire family full protection.

This insurance plan provides $20,000 or $30,000 insurance for the member. Premiums are exceedingly low for every age bracket, and, for the first time, full "family protection" is available at your option. You may have this low cost insurance on yourself, yourself and your spouse, or on the entire family, as you may desire. The amount of coverage for your spouse if insured will be $5,000, and for each insured child the amount of $2,500.

Designed in cooperation with the Louisiana State Medical Society this plan successfully meets the demands of the membership for a top-rated, low-cost Insurance Program.

All members up to age 70 will be eligible during the charter enrollment period. No medical examination is required and Policy-issue is guaranteed regardless of health history, provided 50% of the members apply. Once insured, a member simply remits his semi-annual premium (for himself and family, if covered). Then, in the event of an insured's death, his beneficiary is paid the face amount of his policy. The member may continue his insurance in force as long as he lives, but conversion is required at age 70, without physical examination, to an individual policy other than term insurance. The spouse also, may convert in the same manner. Insurance ceases for children upon attainment of age 23, or marriage, whichever occurs first. However, in this situation, the children may convert their coverage to an individual policy other than term insurance, without physical examination, at their then attained age rate.

The Louisiana State Medical Society's Insurance Program is solidly underwritten. One of America's leading life insurance companies—Continental Assurance Company of Chicago, Illinois—is underwriter of the Louisiana State Medical Society's sponsored Life Insurance Plan. With over $7 billion of life insurance in force, and total resources of over $600 million, it ranks among the top 2% of companies in size. This means that the security of your protection is assured beyond question.

Your Insurance Plan is soundly administered. Louisiana State Medical Society's sponsored Insurance Plans are administered by H. G. Lyman of Emery & Kaufman, Ltd., 314 Camp Street, New Orleans, Louisiana.

In the interest of your personal protection, that of your family and Louisiana State Medical Society, you are urged to watch for a descriptive brochure and an application blank so that you can sign up at once. An opportunity of this caliber may not be again available to you. No matter how much insurance you may now carry, you will want to enroll in this low-cost plan because: (1) It is a singular opportunity for added protection, open to Society members and their families; (2) Much of your present insurance may be intended to provide for your eventual retirement, while this Plan of Life Insurance is intended to benefit your family in the event of untimely death; (3) You can include your spouse and children — all at one cost in one policy; (4) And should a future change in health render you or any member of your family uninsurable, advantages of this protection will be a wonderful asset and greatly appreciated.

Louisiana State Medical Society too, will gain through this member service in attracting and holding members while the members themselves will profit through cooperative action; (5) And Insurance for members and dependents is continued in force without payment of premium in the event of the member's permanent and total disability prior to age 60.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled examinations (Part II), oral and clinical, for all candidates, will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board from April 9th through 14th, 1962. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates participating in the Part I Examination will be notified of their eligibility for the Part II Examinations as soon as possible.

Current Bulletins of the American Board of Obstetrics and Gynecology outlining the requirements for application, may be obtained by writing to Robert L. Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

COOLNESS OF OXYGEN TENT HAS THERAPEUTIC VALUE

The cool environment of an oxygen tent can be of help in the treatment of a number of ailments during hot, humid weather, three New Orleans physicians reported recently.

Writing in the June 24 Journal of the American Medical Association, Drs. G. E. Burch, N. P. DePasquale and A. L. Hyman said they found a cool atmosphere was beneficial in the treatment of allergic skin rash, kidney disease, infectious diseases and thyroid disease in addition to heart disease and asthma.

"Except in certain instances maximal benefit to the patient was obtained simply by placing him in a cool environment with a normal oxygen concentration of the air," they said.

A warm, humid environment increases the work of the heart, they said. Even though a person is resting in bed, hot weather forces the heart to work harder to maintain the body's normal temperature, they said.

"Under such environmental conditions cardiac as well as other debilitating diseases are less likely to improve," they said.

In a study of 10 patients, the authors said, they found in every instance cardiac output, or work, was higher when patients were in the warm environment than when they were in oxygen tents.

In patients without heart disease, average cardiac output was 49 per cent lower inside the tent, they said. In patients with heart disease, average cardiac output was 42 per cent lower inside the tent, they said.

The researchers also reported:

—Five patients with asthma "improved considerably" when placed in air-conditioned oxygen tents.

—Of nine patients with impaired kidney function, seven improved and were discharged from the hospital after being placed in oxygen tents.

—A patient with an allergic skin rash was "markedly benefited" by being placed in an oxygen tent.

—The problem of controlling the temperature of two patients with infection-caused fevers was made easier by use of oxygen tents.

—The pulse rate of a patient with thyroid disease was slowed considerably when he was placed in an oxygen tent.

AUGUSTA POSTGRADUATE MEDICAL ASSEMBLY

The Richmond County Medical Society, Augusta, Georgia announces the Augusta Postgraduate Medical Assembly to be held April 2-4, 1962.

The program will be one of general interest with noted speakers in major fields of medicine. Registration fee of $15.00 covers sessions and a cocktail party.

Since this coincides with practice rounds of the Masters Golf Tournament, interested physicians are requested to register early. Registrations are limited.

For further information write, Julius T. Johnson, M. D., Chairman Postgraduate Medical Assembly Committee, P. O. Box 3323, Augusta, Georgia.

BOOK REVIEWS

Management of Hypertensive Diseases; by Joseph C. Edwards, C. V. Mosby, 1960, pp. 439. Price $15.00.

For a number of years, the English speaking physician had no difficulty in choosing a monograph devoted to hypertension. Fishberg's "Hypertension and Nephritis" was the classic reference work for about two decades. Following the development of more effective drugs and a renewed interest in medical management of hypertension, there has been a sort of minor medical literary explosion in this field. One of the newest additions is Edwards' book. The author states in his preface, "This book is intended to serve as a guide to the practical management of the patient with hypertensive disease. It is written for the busy physician in practice who wants the latest information on the treatment of hypertension and guidance in selecting proper medication for a particular patient."

Most of the book is concerned with practical management of patients with varying severity of hypertensive disease, both essential and of diverse known causes. Abundant use is made of representative case histories to illustrate mode of usage and difficulties encountered with different drugs. He does not present a narrow and too personal point of view about available schemes of management. On the contrary, there are abundant references to original papers of sometimes conflicting opinions. At times this makes it difficult for the reader to decide exactly what the author's own experience has been and also interferes with the smooth flow of his exposition. In spite of this criticism, the author has been fairly successful in meeting his stated aim, and the book is recommended to physicians called upon to manage hypertensive patients. It is better as a desk book for busy physicians than as a single, comprehensive reference work.

EDWARD B. FERGUSON, JR., M. D.

The Structure and Dynamics of the Human Mind; by Edoardo Weiss, M. D., Grune & Stratton, 1960, 472 p. $8.75.

This is a prodigious undertaking, and when the last page is finished, one wonders if he is now indeed familiar with the human mind. Or is it, as the author states in the introduction, the gratification of his "narcissistic wish to collect (his) 'productions' into a single volume." He states that this is the first of two volumes, and may well be the introduction or the outline to a continuing study of the dynamics of the mind.

There are forty-nine chapters, each about ten to twelve pages in length, demarcated into six sections. Perhaps this helps to organize the subject into at least approachable bits. Apparently, the book is intended for anyone interested in the study of human behaviour, for there are passages: "for those of the laity," etc.; but it seems to me that it would be most difficult to follow without a psychiatric and/or psychoanalytic background. The impression on me was that the author had attempted to consolidate what he considers the "best" of Sigmund Freud and Paul Federn into an outline for study of some of the scientific and philosophic considerations of the structure and dynamics of the human mind. If this is his purpose, I feel he has succeeded. If you would read the volume expecting to find the structure and dynamics of the human mind, you might be disappointed.

Some statements presented as facts are certainly open to question. An example is: " . . . people who indulge excessively in sexual activities, induced by purposely sought stimulation followed by frequent orgastic discharges, experience then feelings of depersonalization or derealization. Since these feelings are due to scarcely cathected ego boundaries or portions of the ego, the conclusion is evident that too much libido has been discharged through orgastic experiences and too little is left for cathecting the ego." This is not evident to me. There is some existentialist flavor to some of his other statements: "Severe melancholics are simply driven toward death for the sake of non-existence and nothing else." Amen.

It is an easily readable and thought-provoking book and whether you agree or not with the author's handling and/or modification of so-called "classical" psychoanalytic theories, you will find it enjoyable.

WALTER ROBINSON, M. D.

Handbook of Surgery; Editors, John L. Wilson and Joseph J. MacDonald, Lange Medical Publications, 1960, 644 p. $4.00.

This handbook is one of a growing series published by the Lange Medical Publishers of Los Altos, California. The present volume was published in 1960.

In the preface to the handbook the authors state that "we have tried to include basic diagnostic information and detailed discussion of non-operative management, including preoperative and postoperative care, but in most cases the details of operative technique have been omitted. Exceptions to our rule about surgical technique have been made in the discussions of situations where the non-specialist may need guidance in an emergency or in outlying areas where specialist assistance is not immediately available." The authors have succeeded quite well in their purposes.

The book includes excellent discussions on trauma in emergencies, preoperative and postoperative care, anesthesia, fluid and electrolyte balance, infections and then specialty surgery such as surgery of the heart, great vessels, gynecology, urology, plastic surgery, etc. The specialty sections are very concise summaries in the manage-

ment of the acute problems facing one in general practice or residency training.

The section on hand surgery by Donald Pratt, is an excellent summary of the problems in this field. The major criticism of the book is the relatively small print necessitated by the great amount of material that has been compressed into this pocket sized book. While much of the material tends to be dogmatic in order to achieve conciseness and conform to the limitations of space, it is so well written the dogmatism tends to be acceptable.

The book is recommended for those in general practice as well as a handy reference source for the intern and resident physician.

ROBERT F. RYAN, M. D.

Handbook of Pediatrics; by H. K. Silver, C. H. Kempe, H. B. Bruyn, Fourth Edition, Lange Medical Publication, 574 pages, Price $3.50.

The very fact that this truly pocket-sized Handbook of Pediatrics is now entering its fourth edition, and that it has been translated into several other languages, attests to its excellence. It continues to be an almost unbelievably compact compendium of up-to-date- information on medical problems relating to infants and children.

The introductory chapters on Examination of Children and Management During Illness, as well as those on Emotional Problems and Adolescence are none the less excellent for being succinct.

The chapters on Fluid and Electrolyte Disturbances and on Chemotherapy and Antibiotics are clear and practical. Those on individual diseases are outlined in schematic fashion for both clinical findings and and treatment.

This book can be heartily recommended as a day-by-day guide for all physicians, whether general practitioners or specialists, who have occasion to deal with infants and children. Since it does not aim to be a complete reference work, it includes no bibliography, and therefore does not supplant the larger, more detailed general textbooks.

MARGARET H. D. SMITH, M. D.

Management of Fractures, Dislocations, and Sprains; by J. A. Key, and H. E. Conwell, 7th Edition, Mosby, 1961, 1153 p. $27.00.

This latest revision of the long established text in the management of muscular skeletal trauma includes many important additions. Most notable of these is the inclusion of material on injuries to the hands, and a thorough revision of the Section on injuries to the back.

Although the author disclaims encyclopedic quality of this Edition, it is extremely thorough and the method outlined for the treatment of most fractures continues to be conservative. There is adequate discussion of basic principles of the treatment of fractures and other injuries, and a thorough discussion of complications associated with such injuries adds a great deal to the value of this text.

Throughout this Seventh Edition, the affects of the junior authors' influence can be noted. There is a general improvement of the quality of illustrations over previous Editions. This text should be of considerable value to not only the fracture surgeons and orthopaedists but should serve as an excellent reference for those who are called upon to treat an occasional fracture, as well as to manage the severely traumatized patients which is becoming increasingly more common with the increase in industrial and motor vehicle accidents.

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W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

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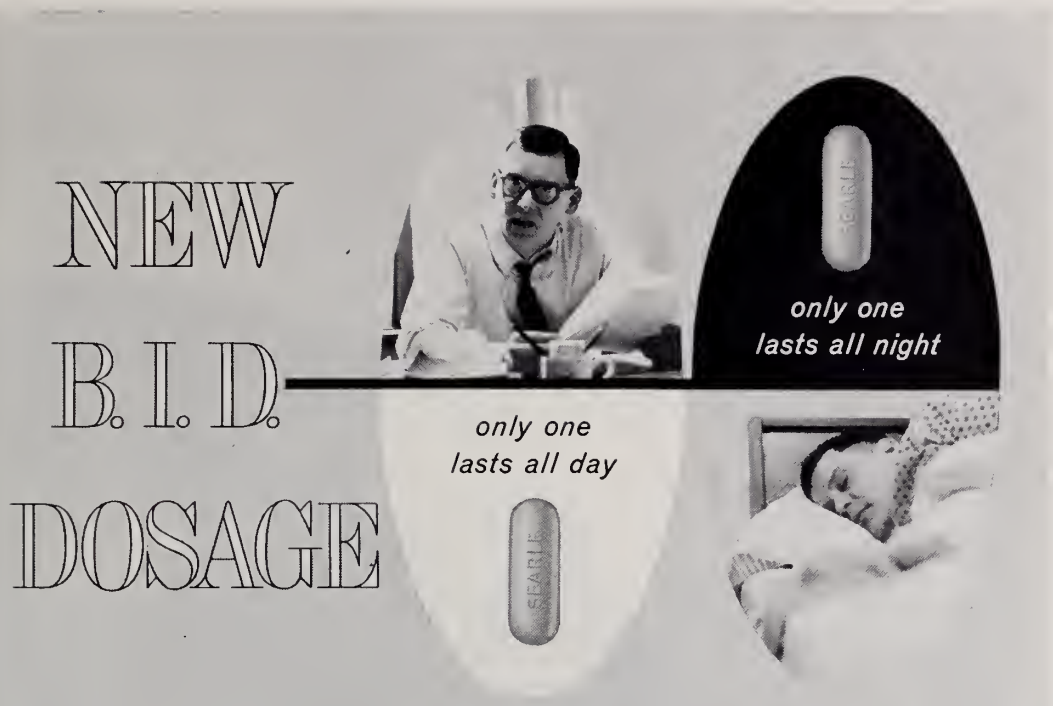
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The C. V. Mosby Co., St. Louis: Medical Genetics 1958-1960: An Annotated Review, by Victor A. McKusick, M. D.

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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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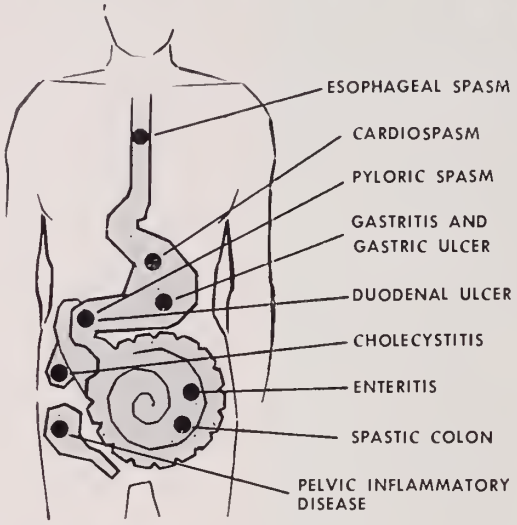
1. Barden, F. W., et al.: J. Maine M. A. 46:99, 1955.
2. Ford, R. A., and Blanchard, K.: Journal-Lancet 78:185, 1958.

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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T.C.C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]
8. Duncan, G. G.: Diseases of Metabolism, 4th edition, W. B. Saunders, Philadelphia, 1959, p. 812 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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1. R. Lamb and E. S. Maclean, Penicillin V—A Clinical Assessment After One Year, *Brit. M. J.*, July 27, 1957, p. 191-193. 2. J. I. Burn, M. P. Curwen, R. G. Huntsman and R. A. Shooter, A Trial of Penicillin V, *Brit. M. J.*, July 27, 1957, p. 193. 3. J. Macleod, Current Therapeutics, *The Practitioner*, 178:486, April, 1957. 4. W. J. Martin, D. R. Nichols and F. R. Heilman, Observations on Clinical Use of Phenoxymethyl Penicillin (Penicillin V), *J.A.M.A.*, p. 928, March 17, 1956.

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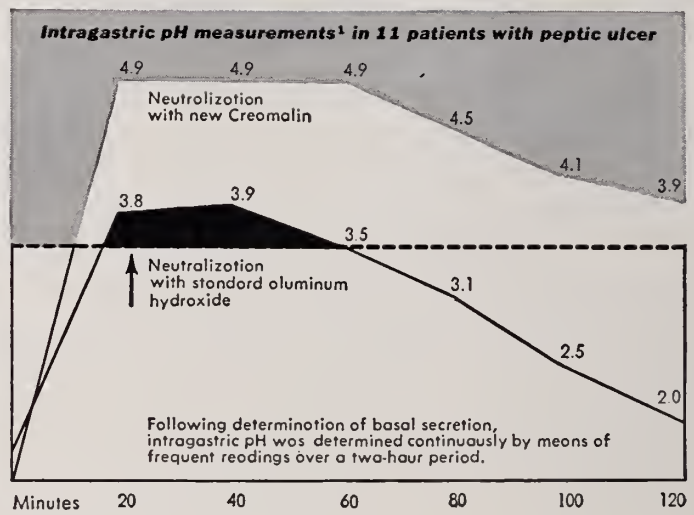


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References: **1.** Schwartz, I. R.: *Current Therap. Res.* 3:29, Feb., 1961. **2.** Beekman, S. M.: *J. Am. Pharm. A.* (Scient. Ed.) 49:191, April, 1960. **3.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:381, July, 1959. **4.** Data in the files of the Department of Medical Research, Winthrop Laboratories. **5.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A.* (Scient. Ed.) 48:384, July, 1959.

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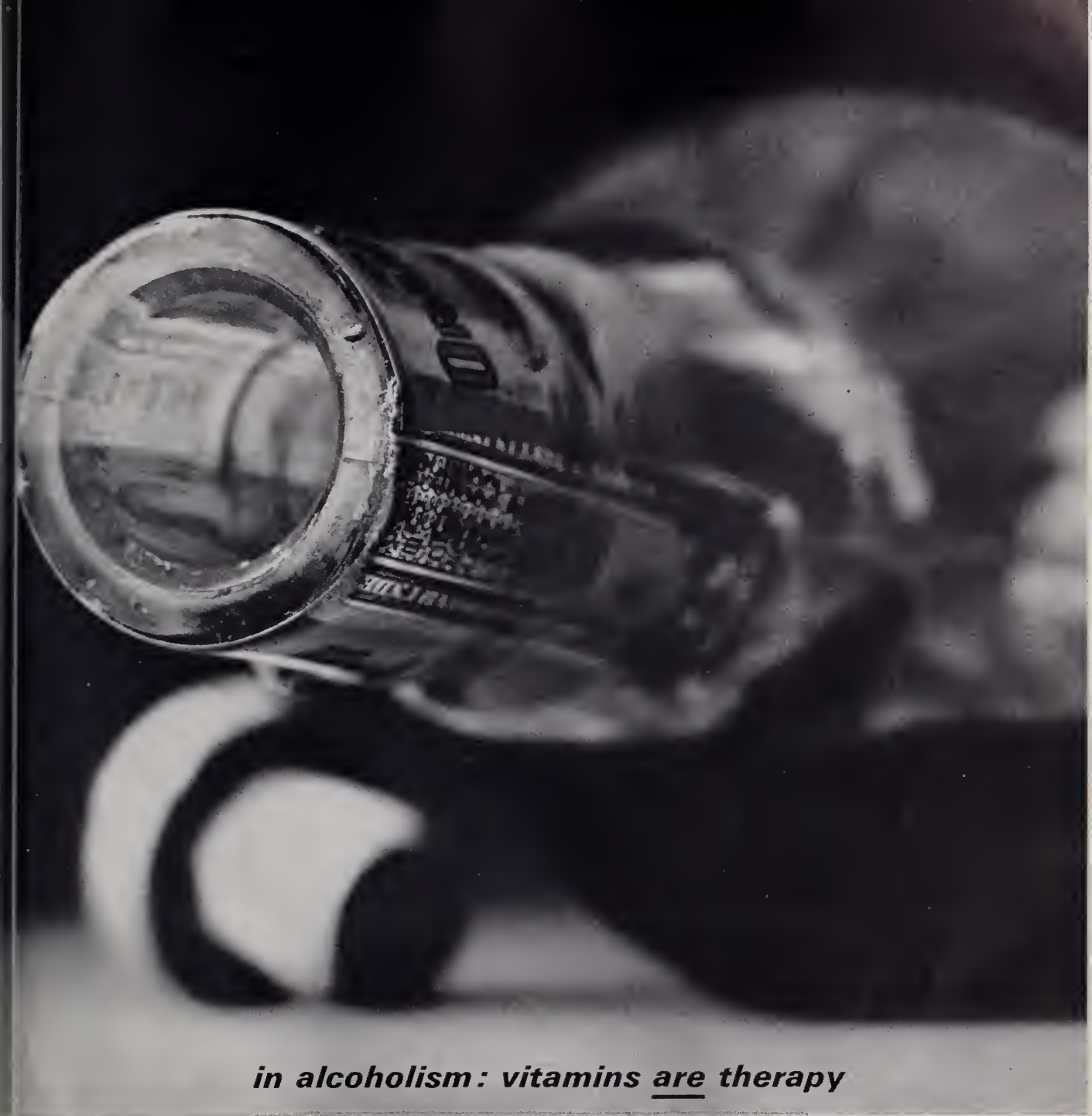
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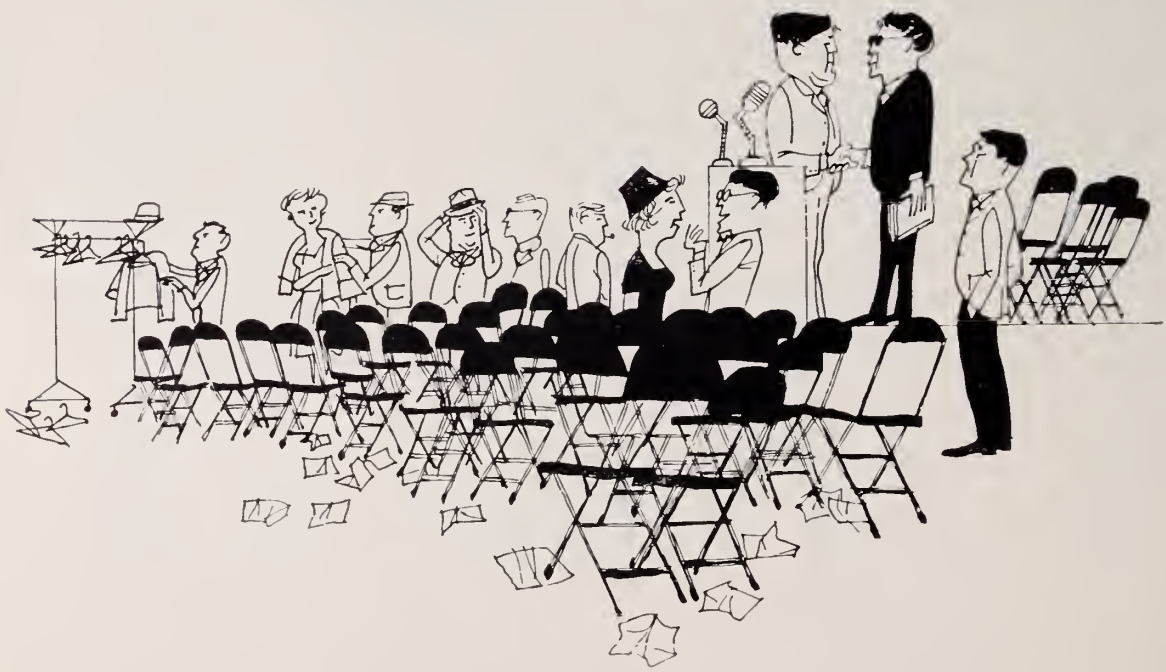
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1. Enactment of the National Cancer Institute Act which created the National Cancer Institute, and

2. Launching by the American Cancer Society of its first nationwide public education campaign out of which was to come a broad program of education, research and service through voluntary support, and

WHEREAS, the American Cancer Society was a major supporter of the National Cancer Institute Act and subsequently supported development and growth of the National Cancer Institute, and

WHEREAS, the National Cancer Institute and the American Cancer Society have demonstrated the need for complementary efforts by the people, on a voluntary basis, and the government, in the attack on this grave disease, and

WHEREAS, the fight against cancer has made remarkable progress since 1937 in the research laboratory, the hospital, the doctor's office, and the public's attitude; therefore

RESOLVED, that the American Cancer Society join with the National Cancer Institute in celebrating twenty-five years of the attack against cancer during the year 1962, which shall be called Cancer Progress Year, and further

RESOLVED, that the purpose of this Cancer Progress Year be to report to the public on where science now stands in cancer research, to intensify the efforts being made to persuade the public to act for its own protection, to improve the care of the cancer patient, and to step up all programs to speed the final victory over cancer.

NOTE: The above resolution was adopted by the ACS Board of Directors meeting in Seattle, June 8, 1961.

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1. Griffith, R. S.: Antibiotic Med. & Clin. Therapy, 7:129, 1960.

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STATEMENT CONCERNING USE OF LIVE ORAL POLIO VACCINE

The Committee on Control of Infectious Diseases of the American Academy of Pediatrics has recently made the following recommendations regarding use of the live attenuated oral polio vaccine:

(1) It is recommended that the live oral vaccines not be used for routine immunization until all three oral vaccine types become available. (Types 1 and 2 are presently available, Type 3 will not be available for some time as yet).

(2) The continued use of the polyvalent Salk-type polio vaccine is recommended.

(3) The only present recommendation for the use of the type specific oral vaccine for mass immunization is during periods of epidemic poliomyelitis when the prevalent virus is Type 1 or Type 2.

The U. S. Public Health Service has a reserve supply of Types 1 and 2 oral polio vaccine for use in epidemic situations when the outbreak is caused by either of these types. A supply of the live oral polio vaccine will be released through state health departments when an outbreak occurs in any community, providing that adequate community organization and medical leadership will ensure rapid and complete immunization of the population under age fifty.



Louisiana State Board of Health

W. J. REIN, M.D.,

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*NEW AND NONOFFICIAL DRUGS, 1959, p. 644.
**DUNCAN'S DISEASES OF METABOLISM, 4th ed., 1959, page 142.



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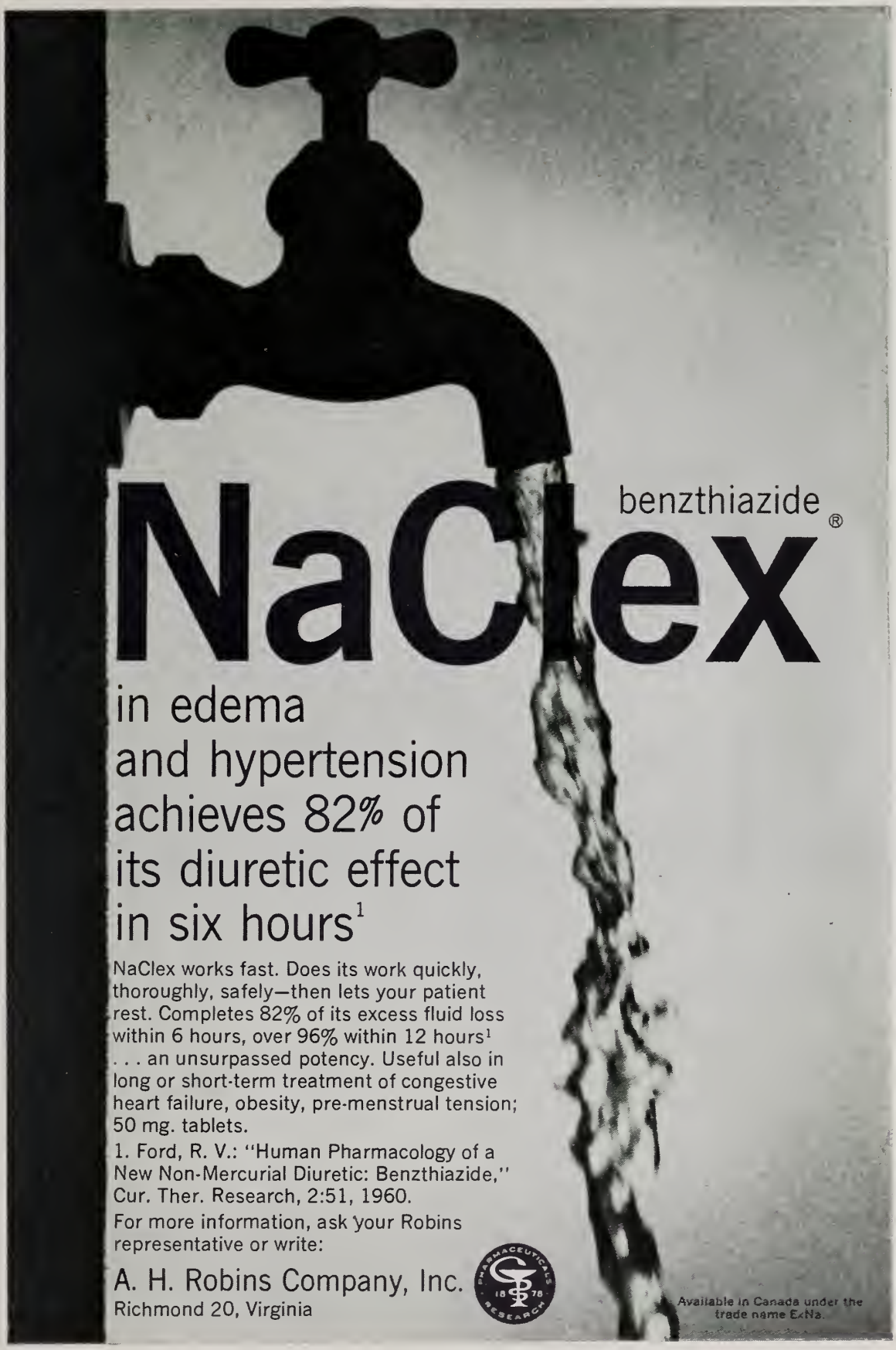
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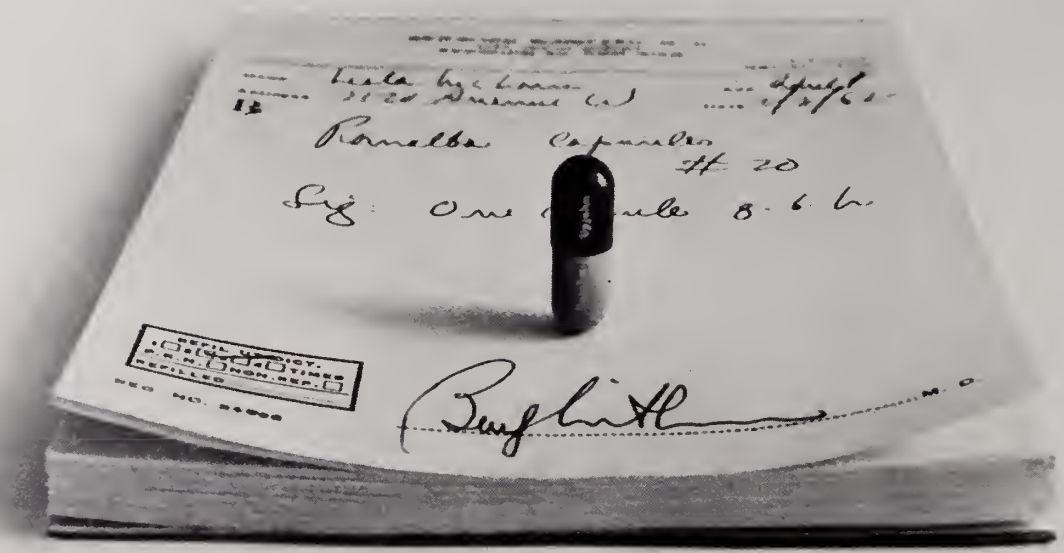
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1. Ford, R. V.: "Human Pharmacology of a New Non-Mercurial Diuretic: Benzthiazide," Cur. Ther. Research, 2:51, 1960.
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Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

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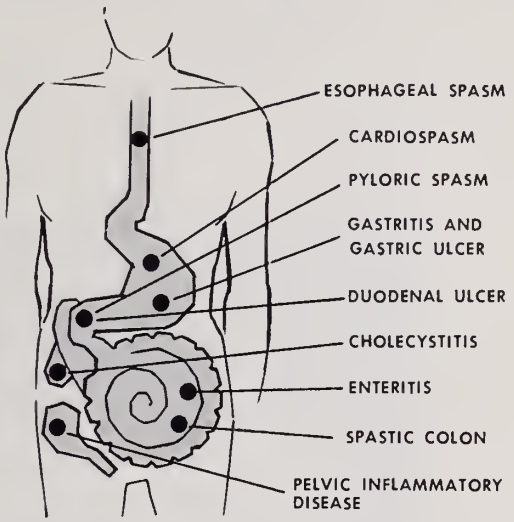
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DECEMBER, 1961

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—Rostenberg, A., Jr.: Clinical Evaluation of Flurandrenolone, a New Steroid, in Dermatological Practice, J. New Drugs, 1:118, 1961.

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The Journal

of the

Louisiana State Medical Society

$4.00 Per Annum, 35c Per Copy
Vol. 114, No. 3

MARCH, 1962

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

Observations on Pulmonary Tuberculosis In the New Orleans Area

• Tuberculosis continues as health problem. The proportion of newly discovered far-advanced cases is not decreasing. The problem is community screening and proper detection of early cases.

JOHN N. BICKERS, M. D.†
HOWARD A. BUECHNER, M. D.*
New Orleans

EFFECTIVE chemotherapy for pulmonary tuberculosis has been on a firm basis for the past decade. Its original impact on the mortality of this disease and its contributions to human welfare are now well recognized. The intervening years have not been static ones, however, and new concepts of proper management of tuberculosis continue to evolve, bringing with them fresh and unexpected problems with which the physician must constantly contend. We now stand on the threshold of a most critical period in which it will be determined whether or not we have the wisdom, the direction and the facilities to bring about the ultimate eradication of this ancient scourge.

This brief report deals with some of the trends in the management of pulmonary tuberculosis which have occurred within the chemotherapy era, as reflected in the activities of our own Tuberculosis Service. It was prompted, in part, by a desire to obtain a perspective of our own changing attitudes toward this disease. It was motivated primarily, however, by our concern over the large number of new cases of tuberculosis which we are seeing and particularly the considerable proportion of patients who have already developed far-advanced, non-salvable lesions when their disease is first detected. We felt the need to try to pin-point some of the specific problems in tuberculosis control which affect our particular patient population. These observations bear directly upon a number of aspects of tuberculosis as it exists in the City of New Orleans, the State of Louisiana and the Gulf South.

Background Data

Thirty-nine tuberculosis beds are operated as a separate unit in the 512-bed General Medical and Surgical Veterans Administration Hospital in New Orleans. Outpatient follow-up care for non-service connected patients is provided in cooperation with local parish, city, and state

† Chief, Pulmonary Disease Section, Veterans Administration Hospital, New Orleans, Louisiana; Instructor in Clinical Medicine, Tulane University School of Medicine.

* Chief, Medical Service, Veterans Administration Hospital, New Orleans, Louisiana; Associate Professor of Clinical Medicine, Tulane University School of Medicine.

health authorities. This service is continued as long as chemotherapy is maintained and longer if dictated by specific needs. Approximately one-half of the patients reside in the metropolitan New Orleans area and about two-thirds are residents of Louisiana. The ward population is all male by virtue of the group served. The hospital participates in the Veterans Administration - Armed Forces Cooperative Study of Tuberculosis, and therapy is generally in accordance with the recommendations of this group.

Material and Methods

The records of all patients who were admitted to the tuberculosis ward, with an established clinical diagnosis of pulmonary tuberculosis, during the years 1955 and 1960 were reviewed and compared. The selection of 1955 was based upon the fact that modern chemotherapy was well established at that time and no major drugs or new therapeutic techniques have come into use since then. Data was incomplete on two patients from 1955 and three from 1960. These were excluded completely from the statistics. Some of the 1960 patients are still hospitalized, and they were excluded from the discharge data. Patients were divided into four groups:

1. Primary treatment cases.
2. Retreatment cases (any patient with active disease who had had any prior chemotherapy was included in this category; in addition, a single patient who was treated with bed rest alone was placed in this group).
3. Patients accepted in transfer from other hospitals for continuation of previously instituted chemotherapy.
4. Patients admitted for other medical reasons or for evaluation of a pulmonary lesion who were found to have inactive or stable disease.

Results

Much of the pertinent data are summarized in the following tables:
The most impressive differences between the two years are the marked increase in the total number of admissions in 1960 and the striking reduction in the average period of hospitalization from eight months in 1955 to three months in 1960.

Approximately ten per cent of the patients seen in 1960 were service connected for tuberculosis, a slightly smaller percentage than in 1955. Changes in socioeconomic qualities and psychological makeup of patients seen during the two years are difficult to assess objectively, and few real differences could be detected. There

TABLE 1.
ALL PATIENTS

	Total Adms.	Av. Age	Av. Stay (Days)	Non-White	Primary Treatment	Retreatment	Cont. of Treatment	Other Med. Reasons	Irreg. Discharges
1955	43	49	236	19(44%)	27(63%)	12(28%)	1	3	0%
1960	105	44	96	35(35%)	51(49%)	28(27%)	9	17	6%

TABLE 2.
PRIMARY TREATMENT PATIENTS

	Average Age	Average Stay	Minimal Disease	Moderately Advanced	Far Advanced	Three or More Lobes Involved
1955	49	274	7%	41%	52%	30%
1960	45	131	16%	37%	47%	26%

TABLE 3.
RETREATMENT PATIENTS

	Average Age	Average Stay	Minimal Disease	Moderately Advanced	Far Advanced	Three or More Lobes Involved
1955	49	204	0%	25%	75%	33%
1960	43	86	0%	25%	75%	50%

has been a definite increase in the number of homeless white males admitted. Alcoholics and sociopaths appear to be increasing in percentage, as are the individuals who require custodial care for chonic, sputum positive, incurable lesions. The incidence of co-existent, non-tuberculous disease has not changed except for an apparent increase in clinical emphysema. The prevalence of extra-pulmonary tuberculosis has remained the same, at nine per cent of the total admissions.

In 1955, only five per cent of the patients received drugs other than isoniazid, para-amino-salicylic acid and streptomycin, while by 1960, 20 per cent of all cases were treated in this fashion, probably reflecting a rise in the incidence of drug resistant tubercle bacilli. There appears to have been little change in the utilization or nature of surgical therapy, as 16 per cent of the 1955 patients underwent resective procedures and 13 per cent of all the 1960 patients have had pulmonary resections.

No systematic study has been made of the 1955 patients since discharge, but the incidence of reactivation of tuberculosis appears to be low. In each group, only 46 per cent of the patients were considered suitable for future employment. Although the mortality of tuberculosis has now been reduced to about eight deaths per 100,000 cases, the death rate of our patients from all causes was exceedingly high. Twelve per cent of the 1955 patients died during their original admission and 33 per cent are now known to be dead. However, few of these deaths could be related directly to tuberculosis. Eleven of the 1960 patients are now dead, with tuberculosis having been the prime cause in five.

The problem of patient desertion from the hospital before the tuberculous process is brought under control has posed a serious threat to the public health in some areas but has caused only occasional difficulty in our own experience. At the New Orleans Veterans Administration Hospital, the desertion discharge rate was zero per cent in 1955 and only six per cent in 1960.

Discussion

When patient characteristics are analyzed, the most impressive differences are found in the decline in average age and the fall in the percentage of non-caucasions to below the hospital average for non-whites.

The fall in average age is most apparent in the primary treatment group. If the seven instances of primary treatment which were received in transfer from other hospitals are included, the average age of this group was seven years younger in 1960 than in 1955. This has occurred in the face of a five-year increase in the age of the veteran population. Undoubtedly, a major reason for this decline in age is the large number of relatively young World War II veterans who are now in an age group with a peak incidence of tuberculosis.

The fall in the percentage of non-caucasians is surprising, and the reason is not readily apparent. It may, however, reflect the greater tendency of white males to lose family ties and assume social habits conducive to exposure and the development of the disease.

Minimal Cases Increased

When the extent and character of the tuberculous lesions are compared for the two years, a discouraging similarity is seen. The only major difference is an increase in the number of minimal and non-cavitary cases seen in 1960. The percentage of retreatment patients has not risen (as might have been expected), but in this group there has been a definite increase in the percentage of patients with large, multiple cavities and with three or more lobes involved. There appears to have been an increase in the percentage of acutely ill and very toxic patients.

Many Newly Discovered Advanced Cases

The most important observation is that approximately one-half of all patients with newly discovered disease have far-advanced tuberculosis when first detected, and this percentage has not fallen significantly during the past five years. This

disturbing tendency has continued into 1961, when in the first ten weeks of the year, twelve far-advanced, cavitary, primary-treatment patients were admitted. Six of these will probably not be salvable. This is a striking reflection on the inadequacy of current screening programs through which early lesions can be detected.

In addition, many of these patients with far-advanced tuberculosis were young, of relatively high socio-economic status and had no history of tuberculous contacts. From this we might conclude that the field of tuberculosis infection has narrowed but little during the past five years, that the level of general exposure in the New Orleans area remains high and that we cannot yet focus our attention exclusively on selected groups with regard to case finding.

Another disquieting observation pertaining to our young patients with far-advanced pulmonary tuberculosis is that many of them were ill for long periods before they sought medical care. Even then, in a few instances, they were observed and treated symptomatically by their physicians far too long before definitive examinations were carried out. These findings might be interpreted as evidence of an unfortunate complacency on the part of the public toward possible tuberculosis infection, and on occasion, even the physician may be guilty of this attitude.

The persistently high incidence of new, far-advanced disease has serious implications out of proportion to the actual number of individuals involved. They result in heavy exposure to many people before their disease is discovered and provide a solid foundation for the maintenance of tuberculosis at its present rate. Little progress toward the goal of complete eradication of tuberculosis can be expected until means are found for getting at this tragic and deadly core.

Active Use of Outpatient Care

The chief differences discernable in the management of the patients is the deemphasis of bed rest and the more active use of outpatient care. In particular, there has been an increased willingness to accept the chronic active patient with negative sputum for outpatient care, about 25 per cent of the 1960 admissions having already been discharged on this basis. This has permitted a marked increase in patient turnover, our present rate being close to the maximal degree consistent with good public health practices. This trend has greatly increased the demands on the ward personnel and on the individuals and agencies necessary to make outpatient care successful. Nevertheless, the over-all effects are thought to be highly desirable.

The most striking — and perhaps the most important — fact in these statistics is that we treated two and one-half times as many cases of pulmonary tuberculosis in 1960 as we did in 1955, and yet the demand for beds has not decreased. Each of our 39 beds rendered the service of two and one-half beds by 1955 standards, and, in effect, we operated a 96-bed service in 1960. The reasons for the continued demand for beds in spite of the rapid turnover of patients is not obvious. During each year, there was a small waiting list, varying from one to four patients at any given time. In 1960, about 10 per cent of the applications for admission were referred to other hospitals. This percentage was greater in 1955 but probably did not exceed 15 per cent. No hospital or service in this general area has closed since 1955, although the number of tuberculosis beds at the Veterans Administration Hospital in Alexandria, Louisiana, has been sharply reduced, apparently because of decreasing patient requirements. There has been an increase in the number of patients from southern Alabama and Mississippi, probably representing some obscure change in bed facilities and hospital referral policies in those areas. One must draw the disturbing conclusion from the foregoing that the incidence of tuberculosis in this general area is, at least, not falling. There is, in fact, reason to think it may be rising.

Conclusions

Based upon the objective data gained through observations on the Tuberculosis Service of the New Orleans Veterans Administration Hospital, over the past five years, several conclusions of a practical nature can be reached.

First, it has become clear that current facilities are adequate for the proper hospitalization and treatment of patients with tuberculosis in this area. When correctly used, present therapy is effective in the vast majority of cases. The modern trend toward shortened periods of hospitalization for patients with tuberculosis is acceptable and excellent facilities, including state provided drugs, are available for the outpatient management and long term follow-up observation of these cases.

Secondly, the major problem in the field of tuberculosis at the present time is not related to the management of the disease but rather to its early detection. Gross deficiencies in case finding methods in this area are pointed up by an alarmingly high percentage of patients who have already developed far-advanced disease when their tuberculosis is first detected. This figure has remained virtually unchanged during the past five years. Too often, the patient is young and has been ill for many months before so simple an examination as a chest X-ray is carried out and the presence of extensive, essentially non-curable disease is discovered. From our data, we have been unable to find a justification for limiting case finding efforts to certain narrow segments of the population. The problem of tuberculosis in alcoholic, homeless men is worthy of emphasis, but most of our patients do not fall into this group. Rather, they arise, without a consistent pattern, from individual of all ages and from all socioeconomic walks of life.

The final observation is less well documented but of utmost importance. This is an apparent increase in the total number of new cases of tuberculosis in the population which we serve. Whether this is real or not, there is sufficient evidence for some alarm. Unless case-finding efforts are redoubled, tuberculosis in this area may again reach major proportions. This would be particularly tragic, since the final eradication of this disease now appears to be within our reach.

Unknown Prescriptions

The thrust of invention and development has placed us all in an informational pressure cooker, and nowhere is this fact more clinically apparent than in the field of medicine. I am told by a doctor friend that seven out of ten prescriptions written today are for items unknown to medicine before World War II. The communications problems that result are more serious here than in any other area, since human health and life itself are involved.—David Sarnoff, RCA Board Chairman, to National Health Council.

Problems in the Evaluation and Management Of 'Compensation' Patients With Injuries of the Lower Back

• Injuries to the lower back require detailed history and careful clinical, including neurological examinations for satisfactory diagnosis. Myelography and other roentgenographic procedures may be indeterminate.

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New Orleans

IT is evident that there has been a great increase in litigation involving injuries sustained by employees while at work. It seems possible that some of these disputes may be the result of rather divergent opinions expressed by examining physicians. Therefore it is obviously desirable that an attempt be made to reach a consensus in the evaluation of such patients so that there is no delay in proper disposition of the individual case. Furthermore, failure to resolve problems such as these by members of the medical profession invites adverse criticism.

There are, of course, several major categories of so-called compensation patients. Undoubtedly the most important insofar as discomfort, disability and time lost from work are concerned includes those who have sustained injuries of the lower back and in particular those who have suffered an injury to a lumbar intervertebral disc.

There are, naturally, as with any medical problem, certain critical points to establish in the interview and examination of such patients. With problems of this type, however, one must be aware continually of the possibility that the injury is being exploited because of the compensation involved. Therefore an interview and examination which include checks and counterchecks are essential. The case presented here demonstrates some of the problems which may be encountered in the evaluation and management of compensation patients who have sustained an injury of the lower back.

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Case History

D.B., a 38 year old male was first seen on 5-29-54. He presented a chief complaint of pain in the lower part of the back and in the right leg. The history included the information that on 12-31-53 while at work as a banana handler, he was injured when the bunch of bananas that he was lifting with a fellow worker slipped from the fellow worker's grasp allowing them to fall against the patient. He thereupon fell backwards from the low platform on which he was standing. He immediately experienced considerable pain in the lower back. He reported that he was taken to a local hospital where he was examined and allowed to go home. He was advised to return if the pain persisted. It did, so he returned to the hospital on the following morning and was admitted. He stated that he rested and slept on a hard bed and received applications of heat to the back and various medications. He was discharged from the hospital after one week. He then was referred to a consultant who was reported to have treated him in the office three times a week for approximately 4 and one half months. He reported that the treatment received as an out-patient consisted of applications of alcohol and heat to the back. These gave partial relief transiently. He stated that the ride on the street car or bus to and from the office aggravated his discomfort, however. He related that after approximately five months had elapsed following his injury he was seen by another consultant and shortly thereafter was advised that his compensation payments would be stopped. Shortly thereafter he sought legal counsel.

Additional questioning revealed that the patient had experienced extension of the pain from the lower back into the posterolateral aspect of the right thigh and leg approximately 24 hours

after the injury. Originally, the pain in the back was more severe than that in the right leg. After several weeks had passed, the patient experienced pain that extended "into all the toes, especially the outside ones." He indicated that he referred to the lateral two toes and added that the pain in the toes was most severe in the "outside two toes." He complained of numbness and tingling in the right lower extremity and indicated that these were most pronounced in the area of pain in the extremity.

The pain became more severe with such activities as sitting, standing, walking, riding, stooping, coughing, having a bowel movement and almost any activity requiring a significant degree of exertion. He stated that with coughing or sneezing the pain extended "like an electric shock" from the lower back into the right lower extremity. When asked to demonstrate the course of the pain, he indicated rather exactly the area of the first sacral dermatome. The walking stick that was carried was said to be used to "take some of the weight off the right leg." He considered the right leg to be slightly weak and stated that he believed this was true because "the right knee seemed to give away at times."

He obtained the most relief by "lying flat on the back" on a hard bed or the floor. He reported that he sometimes awakened at night because of the pain and would get out of bed and sleep on the floor for the remainder of the night. He explained that the floor was harder than his bed and thus he sometimes seemed more comfortable on the floor. The discomfort increased with lying on the right side but he stated that he usually could lie on the left side without undue exacerbation of his discomfort. He stated that he preferred to sit "in a hard chair with arms" rather than in an "easy chair." He demonstrated how he sat with least pain and this involved sitting with most of the weight of the trunk on the left buttock and resting his elbows on the arms of the chair so that they supported some of the weight of his trunk.

The past history revealed that he had worked for the present employer for approximately four and one half years. He had not had any type of difficulty with his back previously. In fact, he had had no previous injuries of apparent significance.

Neurological Examination

Pertinent findings with neurologic examination included the following observations. The patient was a tall and slender but muscular individual who seemed to be in quite acute distress. He walked with a rather marked limp on the right. He sat with most of the weight on the left buttock and with the right lower extremity partially extended during most of the interview. He stood with considerable flattening of the lumbar lordotic curve of the back. There was pronounced spasm of the lumbar and sacral paraspinous muscles with severe limitation of the motility of the lower spine. Right lateral flexion of the lower spine was more painful and more limited than left lateral flexion. Percussion over the lumbosacral area of the spine caused severe exacerbation of the pain in the back with extension into the posterolateral aspect of the left thigh and leg to the ankle.

There was pronounced hypoesthesia in the first sacral dermatome on the right with less marked sensory loss in adjacent dermatomes. The strength appeared normal except for a slight apparent weakness of plantar and dorsiflexion of the right foot and toes and of eversion of the right foot.

The leg manipulation tests for evidence of nerve root irritation revealed the following. Extension of the right leg with the patient sitting caused exacerbation of the pain in the back and right thigh. Extension of the left leg with the patient sitting caused increased pain in the lower back. Straight leg bending to 15 degrees on the right caused marked exacerbation of the pain in the lower back and right thigh. On the left, this test caused severe pain in the back and the right thigh at 30 degrees. Flexed leg bending was severely positive bilaterally for increased discomfort of the lower back. Flexion of the lower extremities with the patient supine followed by extension of the legs caused essentially the same reaction seen with straight leg bending.

Roentgenograms of the patient's lumbar and sacral spine were essentially negative except for a slightly bifid spine of the first sacral vertebra.

Clinical Impression

It was the impression that the patient had sustained severe compression of the first sacral nerve on the right by herniation of the lumbosacral intervertebral disc. Although the patient had not had a trial of complete bed rest with traction, applications of heat and antispasmodic medication, it was believed that the nerve was so severely compressed that such measures would give only temporary relief. Surgical removal of the ruptured disc was recommended.

However, as with most compensation patients, this patient was seen by several consultants and various diagnoses were made. These included "lumbosacral strain", "grossly exaggerating complaints and recovered from effects of low back strain", "no evidence of sciatic syndrome

or disc injury", "no clear-cut evidence of neurologic disease or injury, possible static disturbance of low back", and "the entire clinical picture is masked and feigned."

The patient returned for re-examination on several occasions and subsequent history included the information that he, after several attempts to be admitted to the local charity hospital, finally was admitted. He reported that a myelogram was made. He stated that this was reported to show no pathology. He was discharged and sent to the out-patient clinic.

Subsequent examinations revealed essentially the same findings as were recorded at the original examination except that the patient was even more uncomfortable later. He emphasized that he was anxious to have the ruptured disc removed but that it was not possible for him to have this done because of inadequate finances. His family included a wife and five small children. They received help from the local social welfare organization. Finally, however, he announced that he "had managed to borrow some money from relatives" so that he might enter the hospital for surgery.

Operation

On 10-30-55, approximately 22 months after he had been injured, the ruptured lumbosacral intervertebral disc was removed via partial hemilaminectomy of the fifth lumbar vertebra. The loose fragment of the disc tissue found anterior to the first sacral nerve was adequate explanation for his having failed to show any improvement in spite of many months of relative rest, applications of heat to the back, etc. He tolerated the procedure well and was able to leave the hospital on the sixth postoperative day.

Although he was relieved of the pain in the lower extremity immediately, considerable discomfort of the lower back persisted for approximately three months. The discomfort of the lower back was associated with considerable restriction of motility of the lower back. It was believed that the symptoms referable to the lower back were primarily due to shortening of the paraspinous muscles secondary to their having been in a partial state of contraction as was manifest by spasm on examination during much of his prolonged period of discomfort. This responded very well to continued applications of heat and a gradual increase in exercises directed toward overcoming residual shortening of the involved muscles. He returned to work approximately four months after operation.

Discussion

Although somewhat divergent conclusions are bound to be reached in the exact analysis of almost any syndrome, it seems desirable to attempt to resolve major differences of opinion insofar as is possible. This seems particularly true in the case of compensation patients.

A common source of disagreement in the evaluation of injuries of the lower back appears to be the failure to recognize that the lumbar disc syndrome characteristically consists of a primary phase during which the pain is confined to the lower portion of the back and a secondary phase during which the patient experiences radicular or sciatic pain in addition to the pain in the lower back. It is not possible to distinguish between a disc lesion in its primary phase and the pathology that may constitute only "lumbosacral strain." In fact, that the latter syndrome usually includes damage to the annular ligament of the lumbosacral intervertebral disc seems probable.

During the primary phase of the lumbar disc syndrome, the patient usually demonstrates only spasm of the regional paraspinous muscles with restriction of the normal range of motility of the lower back and evidence of increased discomfort to pressure and percussion over the most painful areas of the back. This phase of a lumbar disc lesion [1] may be evident for weeks or months or intermittently for years before such attacks cease or radicular pain develops.

In the present case the patient experienced radicular pain on the second day after the injury. This usually is evidence

of a particularly severe rupture of the disc and one should consider immediately the possibility that the patient has rather completely extruded a fragment of the disc so that non-surgical measures may be ineffectual. Of course, it is possible that such patients may eventually become free of their radicular pain because of destruction of the sensory fibers in the compressed nerve.

It was evident when this patient was seen by me that he had become somewhat apprehensive regarding performing certain tests. However, the apparent apprehension did not seem inappropriate in view of the degree to which the nerve root appeared compressed and the patient was considered to cooperate with the examination well. In any event, this reaction undoubtedly caused him to be considered to be "masking and feigning the clinical picture."

Myelography May be Indeterminate

Although myelography was reported to show no evidence of a disc lesion, this test is known to fail to show such lesions in a certain per cent of cases. Actually this study is rarely considered necessary in patients with this type of history and findings. Myelography also is rarely indicated during the primary phase of a lumbar disc lesion. If this study seems indicated, one should consider supplementing it with discography if the myelogram fails to demonstrate a lesion. In any event, myelography is seldom done until the conventional non-surgical measures of treatment have had adequate trial as indicated in the individual case and arrangements for surgical intervention have been completed. The incidence of failure of myelography to demonstrate disc lesions can be lowered significantly by using an adequate amount of radiopaque substance. The amount used should fill the dural sac to at least the level of the middle of the body of the fourth lumbar vertebra when the patient is standing. This amount obviously varies with the size of the patient but usually involves using at least nine cubic centimeters of the radiopaque substance.

Although the histories and examinations of patients of this type have been discussed in detail previously,[2] it is wished to re-emphasize that an extensive interview and careful examination, each designed to check and countercheck the pertinent points relative to evidence of injury to an intervertebral disc, are essential for the adequate evaluation of problems of this type. The practice of carefully recording the results of such an interview and examination will undoubtedly improve the consensus of the examiners of compensation patients.

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Drug Industry Contributions

All American industry has contributed, but I must give a special vote of thanks to the pharmaceutical industry, which has contributed in excess of $1 million in cash and drugs to our effort. I have no idea how many other foundations like our own are able to carry on their work because of this great industry, but because this industry has a heart, this award belongs as much to them as it does to me.—William B. Walsh, M. D., founder of Project HOPE, on receiving 4th Annual Health U.S.A. Award.

Ileovaginal Fistula

• The symptoms, complications, surgical and medical treatment of ileovaginal fistula are described lucidly.

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ILEOVAGINAL fistula is a rare complication of pelvic surgery and irradiadiation. Crawford [1] reports 1 case as a complication in 2000 consecutive patients treated with intrauterine radium for pelvic malignancy. Welch [2] reports 1 case as a complication of vaginal trachelectomy in a series of 397 cervical stump removals. An instance of this complication recently occurred at this hospital.

Case Report

E. B., a 53 year old colored female, nulligravida, was first seen in our clinic on June of 1954 for vaginal bleeding.

Diagnosis at this time was (a) Post Menopausal Bleeding, (b) Uterine Myomata, and (c) Chronic Pelvic Inflammatory Disease. Treatment undertaken was total abdominal hysterectomy, however, because of technical difficulties and excessive bleeding at surgery only the subtotal operation was done. The patient's recovery was uneventful. During 1959 and 1960 she was noted to have persistent Papanicolau smears class II and a chronic cervicitis which did not respond to conservative measures. She was admitted to the hospital in November of 1960 for removal of the cervical stump. An extraperitoneal trachelectomy was done, which although difficult, was apparently without incident. The immediate postoperative period was uneventful. On the day of scheduled discharge, postoperative day five, the patient complained of "leaking a little water" from the vagina. On examination no gross lesion was seen but a small amount of thin, yellow, nonfoul fluid was noted in the vagina. The impression at this time was early vesico-vaginal or utero-vaginal fistula. An intravenous pyelogram and instillation of the bladder with methylene blue dye showed the urinary tract to be intact. Repeat examination two days later revealed the above described fluid but at this time it was seen to be coming from the suture line in the vaginal cuff. The impression at this time was a small bowel fistula versus a cuff cellulitis with a serous collection. During the following several days the patient's course continued to be generally good and the vaginal discharge was unchanged. On postoperative day nine the patient was given charcoal tablets by mouth and five hours later charcoal was noted to be present in the vagina. The impression at this time was enterovaginal fistula. Further evaluation revealed an essentially normal proctoscopic examination and a small bowel series which demonstrated the fistula (Fig. 1). On post operative days 17 and 18 a marked increase in the amount of vaginal secretions with excoriation of the vagina and perineum was noted. Concurrently the patient's clinical condition deteriorated rapidly as evidenced by dehydration, a low grade fever, lethargy, and a rising hematocrit and blood urea nitrogen. The picture was that of a rapidly advancing electrolyte imbalance (Table 1). A vaginal sump was improvised to attempt to quantitate the water and electrolyte loss and to protect the perineum from the scalding effect of the small bowel contents. Repair solutions were administered intravenously as noted in Table 1.

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* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society in New Orleans, May 8-10, 1961.

From the Department of Obstetrics and Gynecology, Louisiana State University School of Medicine and Charity Hospital.





Figure 1. Small bowel series with anterior and lateral views demonstrating the ileovaginal fistula.

TABLE I
FLUID ELECTROLYTE THERAPY - ILEOVAGINAL FISTULA
E.B. C/F Hosp No. L46-237632

BUN mgm.%		11	38	44	30	7.0	8.0	9.0	11
CO_2 mEq/L.		-	15	13	20	21	21	17	22
Cl mEq/L.		-	87	91	81	100	100	98	99
Na mEq/L.		-	123	119	127	138	131	-	138
K mEq/L.		-	54	4.0	4.2	4.3	4.6	-	4.7
Hct %		39	44	-	-	-	-	39	-
INTAKE	I.V. (cc.)	-	1500 R/L 500 N/S 1000 5% D/W 40 mEq KCl	3000 R/L 1000 D/W 40 mEq KCl	2000 R/L 1000 N/S 500 3% NaCl 500 5% D/W	2000 R/L 1000 N/S 40 mEq KCl	1000 N/S 2000 5% D/W	1500 N/S 2500 5% D/W 20 mEq KCl	1500 N/S 2500 5% 60 mEq KCl
	Oral (cc.)	-	1440	1540	1600	1100	N.P.O.	N.P.O.	N.P.O.
	Total (cc.)	-	3940	5540	5600	4100	3000	4000	4000
OUTPUT	Urine (cc.)	-	600	1000	3200	2800	750	1600	1100
	Suction (cc.)	-	-	250	450	400	575	1200	-
DATE		9-22-60	11-14	11-15	11-16	11-17	11-19	11-20	11-21

Table 1. Record of electrolyte imbalance with repair solutions given. Heavy vertical line represents day of surgery. Suction prior to surgery represents output per vagina. Suction after surgery represents output per naso-gastric tube.

Operation

Surgical closure of the fistula now became a matter of urgency and management at this point was primarily one of fluid and electrolyte balance. The patient responded well to therapy and was taken to surgery on the 21st day post trachelectomy. On opening the abdomen multiple adhesions were found involving almost all of the small and large bowel, and were particularly dense in the pelvis. This was not too surprising considering the long history of chronic pelvic inflammatory disease and the prior pelvic surgery. For this reason the approach to the lesion on the vaginal cuff, located in a deep pelvis, was difficult and it was necessary to resect two feet of terminal ileum, one foot from the cecum. An end to end small bowel anastomosis was done and the resected portion dissected free and the vaginal cuff closed. The postoperative course was uneventful.

Comment

Various etiologies for this condition are radium therapy, probably the most common cause,[3] vaginal hysterectomy and posterior colpotomy for pelvic abscess. Regional ileitis with abscess formation has also been associated as a cause of this fistula.

Regarding management, Taylor [4] recommends expectant treatment for two to three weeks and if closure is not spontaneous then surgical correction. Herbut [5] observes that healing is never spontane-

ous and the treatment is always surgical. Svien [6] recommends that no surgical repair be attempted for at least six months in those cases which represent complications of radium therapy. In his case report the patient had a socially incapacitating fecal vaginal discharge for 12 years but was able to continue her duties as a schoolteacher. When the patient finally reported for treatment the surgery was entirely successful. In our patient, the time of onset of the first symptom to severe electrolyte imbalance was 14 days as opposed to the above patient who continued to function satisfactorily for over 12 years. It is obvious that this fistula has widely varied clinical manifestations probably dependent on the size of the defect and the resultant volume of small bowel contents lost per day and perhaps to a lesser extent on whether it is proximal or distal bowel involved. In one instance a simple closure of the fistulous defect in the bowel was reported, however, in the majority of cases associated bowel pathology such as dense fibrous adhesions secondary to abscess and infection, and stricture secondary to radium makes removal of this portion of bowel desirable.

Varied and interesting diagnostic methods have been used to approach this problem over the years. In one early case some years ago, the physician [1] observed that the patient was in very poor general condition, had a "fiery red perineum" and noted a thin watery fluid coming from a pencil sized hole in the vaginal vault". A barium enema was normal and he suspected an enterovaginal fistula. He confirmed his diagnosis at laparotomy and found a most unusual ileovaginal fistula which transversed the entire length of the left broad ligament. Counseller [7] describes another interesting case. The patient received radium treatment elsewhere and subsequently developed a fecal vaginal discharge. A rectovaginal fistula was presumed and a colostomy was done with no change in the symptoms. A year and a half or so later the patient consulted Counselor for this persistent fecal drainage from the vagina. The diagnosis of ileovaginal fistula was made when water was noted to come from the vagina following irrigation of the proximal loop of the colostomy. The diagnosis was confirmed by direct inspection when rhythmic contractions of the intestinal mucosa could be seen through the defect on vaginal examination. Barium, in addition to its use in X-ray studies, made the diagnosis in one case when it was seen coming from the vagina some 40 or 50 minutes following ingestion. In the present case charcoal was used because it is simple and requires no preparation or manipulation of the patient. It is inert, nonirritating, and easily identifiable. Barium studies are obviously most desirable in attempting to localize the bowel lesion.

Summary

1. A case of a rare complication of vaginal surgery is presented and the methods of diagnosis and management are described.

2. Available information on incidence, etiology, diagnosis, and management are reviewed.

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Discussion

James G. Mulé, M. D. (New Orleans): Dr. Long has concisely and interestingly pointed out the rarity of this complication following gynecological surgery, the importance of recognition and essentials for proper therapy. There are, however, certain surgical and medical aspects of this case which I would like to amplify.

Of interest is the development of this fistula following extraperitoneal removal of the cervical stump. Controversial opinion exists in regard to the safer method of trachelectomy. Those who advocate an intraperitoneal procedure by the vaginal route would point out the increased probability of prevention of a fistula by this method. It is assumed that damage to the ureters, bladder, or intestine by dissection

or sutures would be readily recognized and repaired. On the other hand, those advocating an extra-peritoneal route have equal claim to prevention of damage to any hollow viscus in this region. From the history of previous and subsequent surgery it is doubtful that either method would have netted different results in this case. Gynecological surgery in the face of pelvic inflammation is admittedly difficult, time consuming, and requires great care to prevent damage to surrounding structures.

Of equal interest is the development of electrolyte and nitrogen imbalance of this patient. The rapid development of "nitrogen retention" in the face of normal or increased daily urine volume suggests the presence of "low salt syndrome". This syndrome is well recognized in the face of salt restriction in obstetrical and gynecological patients with cardiac, renal, or toxemia disease of pregnancy as well as those with excessive sodium loss in the face of intestinal obstruction, advanced renal disease, and in this case with small bowel complications. In all of these patients the net result is a decrease in total body stores of sodium and chloride.

Dr. Long has emphasized the importance of small bowel function and resultant clinical manifestations of the patient. The lesion of the small bowel which permits passage of large daily volumes of watery discharge will result in severe chemical disturbance in these patients. Correct interpretation of nitrogen retention on the basis of "low salt syndrome" and immediate correction by the administration of adequate amounts of electrolytes is of paramount importance. This is especially true when surgical intervention is contemplated since adequate, appropriate, medical therapy may be life saving in those instances.

Scientists in Industry

Three decades ago most scientists looked down their noses at offers of research jobs in industry. Now, working in well-paid posts . . . some of the country's ablest bacteriologists, chemists, and pharmacologists have made possible the most imposing series of scientific developments ever compressed in such a short span of time. Thousands of people are alive and well today who 10 years ago could have died without antibiotics, steroid hormones, and anticoagulants. Many of the one-time killers have been robbed of their terror by heavily-backed industrial research.—Marguerite Clark, medicine editor of **Newsweek**, in **Medicine Today**.

Syphilis Today and Its Consequences*

• A plea for the physician to recognize that syphilis will not cease to be a danger and that proven methods of detection should and must be routinely employed.

FRANK R. GOMILA, JR., M. D.†
New Orleans

ONCE again the front pages of our local newspapers, Readers Digest, and local medical journals, are putting before us in blazing headlines "Syphilis Once More" — "Sharp Increases in Early Infectious Syphilis", etc. Locally and nationwide we are hearing and seeing articles about tremendous increases in venereal diseases, particularly early infectious syphilis.

You stop and ask yourself "Why all this hullabaloo?" But, did you answer the question "Why this unbelievable increase in syphilis?" The answer is simple. You and I as private practitioners, clinicians, and professors in dermatology and syphilology, have again proven the truth of Neisser's words when he said that "Human indolence and stupidity will always arrange that syphilis will never die out, but will always remain a dangerous disease."

The late internationally famed surgeon Dr. Rudolph Matas once said "Civilization produces syphilization". As our statistics of early infectious syphilis continue to mount with the years, people who are intimately associated with Venereal Disease Control are beginning to accept this statement without question.

For centuries the venereal diseases were accepted as the inevitable fate of those who break the laws of morality. There was no adequate therapy and the blindness, insanity, lameness, or sudden death that came were considered with as much resignation as the death that was likely to come to people with smallpox, cholera, or any other infection that just happened.

"Eradicate Syphilis"

Today we have really effective remedies for the prevention and treatment of syphilis and one would think that syphilis would become as rare as smallpox or diphtheria, but this hope has not now, nor will it ever be fully realized. Many people like to use the word "eradicate" in referring to objectives to be reached in Venereal Disease Control. This, to me, is impossible, since syphilis is propagated by sexual relations. God's plan for reproduction includes sexual relationship between the opposite sexes. Therefore, in order to eradicate syphilis, sex itself will have to be eradicated. This, I don't believe will ever become a reality.

Many persons believe that since penicillin treatment is so safe and effective, the fine points of a diagnosis of the differentiation of syphilis from other diseases can be thrown out of the window, and no harm will come from the wholesale indiscriminate use of this drug. But we, as private physicians, must never forget that syphilis is a malignant disease, for it can, and surely does, produce death. Therefore, it should be given the same consideration as other malignant diseases, such as cancer.

Syphilis Continues to be a Danger

Even though many advances have been made, there are still many unanswered questions connected with syphilis. Despite all of the progress we have made in reducing the mortality of syphilis, it is still one of the more important causes of death among the infectious diseases.

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, 1961 in New Orleans.

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Many feel that syphilology has become rather unimportant, but, as Dennie stated in 1950: "The syphilologists may be dying out, but syphilis is certainly not" is even more apropos today than in 1950.

As private practitioners, clinicians, professors, and laymen, there are several questions we must ask ourselves: (1) What has penicillin actually done? (2) Is syphilis dead? (3) What evidences for and against do we have that syphilis is or is not dead? (4) What are the problems that we encounter in syphilology? And last but not least: What is the future of syphilis?

Penicillin

The physician may be guided by certain basic facts:

(1) Wholesale and the indiscriminate use of penicillin has masked many early manifestations of syphilis—many times dooming people to a later life of blindness, insanity, neuro complications, paresis, etc. A person should not be given penicillin until the doctor, by various tests, has ruled out completely the possibility of a lurking treponema pallidum.

(2) Many physicians and dermatologists are thinking of syphilis as a rare disease. Our statistics have proven beyond a doubt that syphilis definitely is not dead.

(3) The problems which we encounter in Venereal Disease Control today are: (a) Complacency on the part of everyone, thinking that since World War II penicillin, the miracle or wonder drug, has cured all syphilis. (b) Hospitals, institutions, prisons, private practitioners and clinicians are failing to order a routine blood test on each patient or inmate. This one thing alone is unforgivable, because congenital syphilis is again on the increase. Just because the mother shows no outward manifestations of syphilis, literally thousands of obstetrical patients complete prenatal and postnatal care without one single blood test. In the light of basic teaching 25 years ago, this is hard to believe. But we, in venereal disease control, see it every day, and we are failing our fellow man by not requiring a routine blood test on each patient every time he, or she, presents himself to us for an examination or a complaint. It is our duty to rule out the possibility of syphilis in each individual for as long as we call them our patients. We are paid, and paid well, to do a job and, if we fail to subject them to a blood test, we are failing to live up to the oath we took as a doctor. As long as this earth is inhabited with human beings, sex will never change—neither will syphilis. It will always be lurking in the byways and highways of life, because we can never change the sex habits of humanity.

Epidemiology

The one thing that completely defeats the control of syphilis is the failure of physicians, hospitals, institutions, all laboratories—both state and private—to immediately notify the proper public health officials each and every time they have an early infectious case of syphilis, so that the infected person may be interviewed for his, or her, sex contacts. It is only through epidemiology that any chain of a syphilitic infection can be broken.

Any time any of you physicians treat an early infectious case of syphilis and do not have this person interviewed for sex contacts, you are wasting lives, time, money and medicine, because the source of his, or her, syphilis is still at large and continues to spread his, or her, syphilis.

It always amazes, as well as amuses, me to see physicians, hospitals, etc., get an avtive case of tuberculosis, and watch the swiftness in reporting that case to the proper officials, so that an epidemiologist can be on the scene immediately to track down the tuberculosis contacts. But watch his reaction when he encounters a case of early infectious syphilis—no reporting, no epidemiology, no follow-up—just a shot or two of penicillin and your syphilis patient will be safe, or will he? Do you really care? Epidemiology in venereal disease is just as important in public health as the epidemiology in the case of an active tuberculosis patient.

Syphilis May Appear in Many Forms

Have you seen the ravages of syphilis? Optic atrophy, congenital horror, infants with their dead noses and black mask of a face? Syphilis may masquerade in such a manner and present the syndrome of idiopathic epilepsy, blindness, deafness, dementia praecox, and brain tumors. Tabes dorsalis, certain aneurysms, and many other infirmities are due to the treponema pallidum. The ravages of syphilis are just as horrible and deadly as those of tuberculosis. There is no difference—both are public health menaces, and the end results in both are identical.

Future of Syphilis

Now comes our last question: What is the future for syphilis? This can only be answered by you and by me. How interested are we in our fellowman? Are we interested enough that each time a patient presents himself to us for an examination, or a complaint, that we will take time to routinely draw five cc's of blood to send to a reliable laboratory for examination, to at least rule out syphilis? Will we, as physicians, stop and think before we administer penicillin before we have ruled out the possibility of syphilis?

The future of syphilis lies with you and with me. Do we care enough to do our very best? Always remember the old adage "Seek and ye shall find." And always remember that syphilis is ever present, and all that you and I have to do is look and we will surely find.

Drugs from Mushrooms?

A pharmacologist at the University of Connecticut School of Medicine is undertaking a three-year project involving two species of mushrooms containing substances believed to affect the mind. Dr. Marvin H. Malone emphasizes that while certain agents found in mushrooms cause ill effects when consumed in large quantities, they have proved beneficial in moderation. Related research is under way at other universities and laboratories. For example, Dr. Varro E. Tyler, Jr., associate professor of pharmacology at Washington University, is delving into the poisons in mushrooms growing in the Pacific Northwest.—**Medicine at Work,** July 1961.

Evaluating a New Gel* for the Relief of Pain In the Primary Dentition of Infants

• The author describes a local application which would be a practical help to the physician, the child and the family in the care of primary dentition in infants.

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Gramercy

PRIMARY dentition in infants, although a natural process and of little more than passing concern to the physician, is often a real problem to the infant and his parents. Most infants experience pain in varying degree during the process. The pain is often accompanied by fretfulness, crying, sleeplessness, anorexia and usually by anxiety on the part of harried parents who are frustrated by their inability to comfort the child. It may also lead to fever and other systemic disturbances. The pain and its associated consequences generally disappear after the tooth erupts, but in many cases it is a sufficiently disturbing experience for parents to cause them to turn eagerly to any source which promises relief.

Local Application of a New Preparation

As far as the physician is concerned, the problem of primary teething patients calls for reassurance to the parents, and the prescription of some palliative medication for the infant to bring relief both to infant and parents. Since most available preparations are either not sufficiently effective or suffer from other drawbacks, a new gel preparation containing choline salicylate with cetyldimethyl benzylammonium chloride as a surfactant, appeared to be worth trying.*

The salicylates, of course, are effective analgesic and antipyretic agents and their action is considered to be antiinflammatory as well.[1] Their ability, as topical agents, to penetrate the tissues of the oral mucosa has also been demonstrated,[2] but the established salicylates, notably acetylsalicylic acid, are known to produce local tissue irritation, especially where the tissue is inflamed, and to corrode tooth enamel.[3, 4] This appears to be due to the acidity of these salts.[4]

Choline salicylate has been reported as effective in its analgesic, antipyretic and antiinflammatory action as the established salicylates, without their irritating or corrosive consequences.[5] It is approximately neutral in pH and stable in aqueous solution. The surfactant used with this new salicylate is an effective germicide besides helping to reduce surface tension, thereby permitting the medication to cling to the gingival surface and to penetrate inflamed tissue more readily.[6]

Method and Materials

A clinical study of this choline salicylate teething preparation was conducted among 48 teething children ranging in age from 3 months to 3 years. About half of the patients were brought to the office routinely; the other half came as a result of word-of-mouth information of an effective new teething medication. In a small town, such news travels fast.

The complaints listed by the parents consisted of crying, chewing, sucking, biting and irritability; 23 of the 48 children had fever. Two had rhinitis and vomiting, and 1 child had diarrhea. Gingival findings included swollen and inflamed gums in virtually every child, with ulcerations in a few.

The gel containing choline salicylate was first administrated in the office as a demonstration to the parents. A tiny portion, about the size of a pea, was carefully massaged on the inflamed area of

* Supplied as Teejel by the Medical Department of The Purdue Frederick Company, New York, N. Y.

† St. James Hospital, Lutcher, Louisiana.

the infant's gum. The gel was then given to the parents who were told to apply it anywhere from 3 to 6 times a day, including just before bed-time, until the symptoms disappeared. The parents of the 3-month-old infant and the 3-year-old child were instructed to apply the medication once or twice a day.

Each parent was given a simple printed form to fill out and return. This form called for a description of the affected gums, the length of time it took for the medication to become effective, how often application was necessary and a characterization of the results. Parents who did not submit their forms within a short period were followed up by telephone until they brought or sent them in.

Results

The results depended, of course, on the findings of the parents, and these were bound to be largely subjective. They were striking. The parents of 40 out of the 48 teething infants reported that each application brought relief in two minutes or less (Table 1) and five others reported relief in three to five minutes. Two parents reported relief in fifteen minutes and one in 30 minutes. All, without exception, reported that in one to two days pain and inflammation had disappeared; fever, where it existed, had been reduced or eliminated, and other symptoms had likewise disappeared. Parents of 41 of the 48 children described the results as "excellent", and the other 7 as "good". Several had enthusiastic comments appended to the reports, and some communicated such comments directly by phone or in person. The investigator's experience with his own infant accorded with those of other parents. With a single exception, all infants accepted the medication readily. The single exception, 6 months old, cried during administration.

Comment

Since the chief aim of medication in teething disturbances is to bring symptomatic relief to infants, and to relieve parents who are troubled and harrassed by their infants' suffering, the subjective judgment of parents regarding the effectiveness of a particular course of therapy is certainly a valid criterion. As noted, the response of parents to our study of a new salicylate teething gel was startling. Both through the reports of those involved in the study and the rapidly expanding requests for the medication by other members of the community who had heard of it from them, its effectiveness in bringing symptomatic relief in teething appears to be demonstrated.

The consequences of such relief may be considerable. It will be noted that while systemic disturbances were present in slightly more than half of the infants in the study, only 3 suffered rhinitis, vomiting or loose bowels. Though medicine today tends to reject any association between the physiological process of tooth eruption and such systemic disturbances in the infant,[7] some authorities believe that if this association was exaggerated in the past, pediatric thinking has now swung too far in the other direction.[8]

Results

It would appear from our direct observation that about 90 per cent of teething infants reveal such symptoms as restlessness, irritability, sucking and chewing, and that about a third to a half of these suffer such systemic disturbances as fe-

TABLE 1.
RESULTS OF SYMPTOMATIC THERAPY WITH TEETHING GEL

		Latent Period after Application of Gel				Patients with Systemic Disturbances Prior to Medication			
Results	Total Patients	0 Minutes	1-2 Minutes	3-5 Minutes	Over 5 Minutes	Total No.	Fever	Rhinitis and Vomiting	Loose Bowels
Excellent	41	18	17	4	2	21	19	1	1
Good	7	3	2	1	1	5	4	1	–
Total	48	21	19	5	3	26	23	2	1

ver, gastric upsets and respiratory infections. These seem to be related directly to the number of teeth erupting simultaneously, particularly the sharply pointed canines and premolars which cause greater gingival trauma and therefore greater morbidity. The severe gum inflammation and pain disrupt normal eating and sleeping patterns, and thus tend to predispose the infant to systemic disturbances.[9] The swallowing of air and excessive mucus and saliva, induced by continual sucking, chewing and biting, can result in gastrointestinal disturbances; this has been adequately demonstrated by adult aerophagics, in many of whom the question of serious intra-abdominal disease has been raised in differential diagnosis.

Though the overall incidence of systemic disturbances in our study was fairly typical, it is possible that the incidence of gastric and respiratory disturbances was reduced by the fact that pain and inflammation were relieved rapidly by the medication, instead of enduring for the customary 3, 4 or 5 days. Since the symptoms customarily associated with teething—sucking, chewing, restlessness—likewise disappeared with relief of pain and inflammation, the factors which appear chiefly responsible for these systemic disturbances were eliminated within 24 to 48 hours. It is significant that mothers have frequently commented in the past that their infants suffered these disturbances two to three days after the onset of teething signs.

Summary and Conclusion

Forty-eight infants who were experiencing pain and other symptoms associated with teething were treated with a new teething gel preparation * containing choline salicylate with cetyldimethyl benzylammonium chloride as a surfactant. The parents of every teething infant reported that application of the gel brought relief of symptoms and that the pain and inflammation, as well as other associated symptoms, disappeared in one to two days. In the case of 40 of the 48 infants, parents said the application brought marked relief in two minutes or less. In 41 cases, the parents evaluated the medication as "excellent"; in the other 7 cases, as "good".

The medication adequately fills a gap in the therapy of primary teething, and is safe in treating both simple and severe teething signs. It was not only well tolerated, with complete absence of side effects, but elicited from mothers the frequent comment that infants appeared to enjoy the taste.

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* Supplied as Teejel by the Medical Department of The Purdue Frederick Company, New York, N. Y.

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Some Observations and Speculations About Winter Asthma*

• A study of a certain type of bronchial asthma which is limited to the period from October to April, taken from 100 such patients from the author's private practice.

STANLEY COHEN, M. D.
New Orleans

THE following study deals with a certain type of bronchial asthma, different from other types by virtue of its limitation mainly to the period from October to April. It concerns one hundred such patients taken consecutively from the author's private practice. Its purpose is to illustrate that a major offender is the house dust allergen; that this antigen is ubiquitous and immunologically identical although obtained from sources remote from the patient's locality.

General Factors of Interest

Some idea of the rate of occurrence of this condition is indicated by the fact that these patients comprised sixty-eight per cent of the total number of asthmatics presenting themselves in the interval of the study. An additional fact deserves special emphasis. About eighty per cent of these patients sustained their symptoms exclusively between the months mentioned above and a remission between June and the end of September.

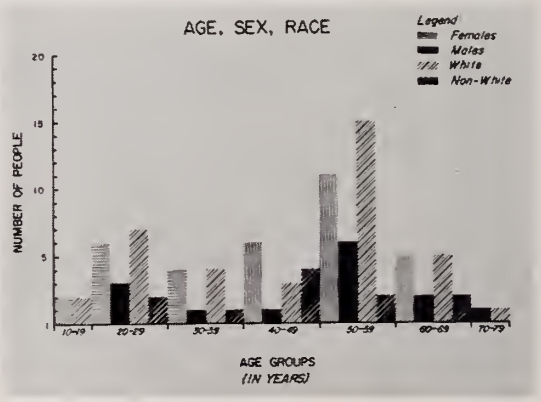
The age of onset symptoms as ascertained from the patient's history varied as recorded in Table 1.

TABLE 1.
AGE OF ONSET

	Per Cent
Before a month of age	4
Between a month & 2 years	14
Between 2 years & 12 years	42
Between 12 years & 25 years	30
After 25 years	10

Because one's private practice is not a random sample of the population, no effort was made to study the group with reference to geographic location. However, they lived in New Orleans and the surrounding area of Louisiana and Mississippi. Seven patients first developed symptoms outside the south. Three were from Central America.

CHART 1.



It is not the author's contention that this type of asthma is peculiar to this area or period. Actually mention of this syndrome was made by Salter [1] one hundred years ago in England and Phelps [2] recently reported the same phenomenon in Japan.

Procedure

All of these patients were skin tested by the puncture type scratch test with five house dust extracts prepared by the Boatner-Efron technique of acetone fractionation and dialysis.[3] The source of each extract was dust shaken from the pooled contents of old fiber mattresses. These were obtained from mattress rejuvenators of five different cities, viz., San Antonio, Texas; Natchez, Mississippi; Trenton, New Jersey; Chicago, Illinois; New Orleans, Louisiana. After extraction

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, New Orleans, La.

and purification of each dust sample by the aforementioned technique, each extract was adjusted to represent 2.5 per cent solids.

The specificity and reliability of extracts prepared by this method have been adequately studied.[4] Statistical studies indicate they have a diagnostic efficiency of better than 90 per cent. They are non-irritating as evidenced by a statistically significant difference in incidence of reactions on patients and controls.[5]

Results are expressed in Table 2.

TABLE 2.
EXTRACTS

	Strongly Positive	Positive	Total Positive	Negative
1. San Antonio	68	15	83	17
2. Natchez	66	16	82	18
3. Trenton	61	20	81	19
4. Chicago	68	10	78	22
5. New Orleans	69	13	82	18

Discussion

These figures certainly justify the conclusion that there is a common antigenic denominator in dust shaken from degrading fibers found in old mattresses. Undoubtedly this same material can be recovered from other household articles. The genesis of an attack of asthma depends on the inhalation of particulate matter containing this antigen; extraction of the antigen in the water of the mucous membranes of the respiratory tract and the formation of whealing pathology in situ. Studies in fractionation of crude house dust extracts indicate that the antigenic solids are more soluble in water than the non-antigenic ones. They form only eight per cent of the total dissolved solids, yet are the most soluble.[5]

Assuming this to be the correct modus operandi how are we to explain the periodic nature of attacks? Also, how are we to explain the varying degrees of allergic respiratory disease from rhinitis to asthma? Obviously these answers are not easy, but if we draw a parallel from other types of inhalant allergies, such as ragweed pollen asthma, where the quantity of the offender has been measured and correlated with symptoms, then one must anticipate that the quantity of house dust antigen present in the household air is higher at times of attacks. One must expect that during the warm summer months there is less.

This is certainly possible, for the fine dust shaken from mattresses is very hydrophilic. After weeks of the high humidity of the summer months it is not inconceivable that these particles become heavier and less air-borne.

This explanation cannot be construed to discount other factors such as the effect of weather on mucous membrane permability or the physical defenses of the respiratory tract. However, the next logical step should be directed toward an actual count of air-borne particulate matter in patients' homes to ascertain whether there is any correlation between particle count and attacks of asthma.

Summary

One hundred patients sustaining attacks of bronchial asthma mainly between October and April were skin tested with four purified house dust extracts prepared from sources remote from their locale and one from New Orleans. About 80 per cent positive reactions were obtained with all extracts. It is concluded that there is a common antigenic factor in all these house dust samples and that it is a major offender in this type of asthma. Some speculations are made regarding the seasonal nature of this entity.

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Editorial

Fever of Unexplained Origin

Fever has long been known as an important sign of disease. In the past century the "fever doctor" was held in esteem by the laity. In the present century with greatly increased facilities for identifying its causes the "fever doctor" is held in even greater esteem by other members of the medical profession. Cumulative clinical experience is the guide which all physicians use in such cases. A compilation of intensive experience of this type provides those who study it with valuable help in the approach and possible solution to this problem.

Petersdorf and Beeson* report an analysis of 100 cases which is instructive and stimulating. The criteria selected for inclusion in this series reported were illness of more than three weeks' duration, fever higher than 101°F on several occasions and diagnosis uncertain after one week of study in hospital. In previous writings on this topic by other authors their material has been chosen somewhat differently. Among the cases reported were the following categories:

Infections	36
Neoplastic diseases	19
Collagen diseases	13
Pulmonary embolism	3
Benign non-specific percarditis	2
Sarcoidosis	2
Hypersensitivity states	4
Cranial arteritis	2
Periodic disease	5
Miscellaneous diseases	4
Factitious fever	3
No diagnosis made	7

Among the infections tuberculosis led the list with 11. The tuberculin test was positive in 8 of these 11 patients, 6 of whom had widely disseminated disease. In several instances tuberculosis was not even seriously considered for several weeks after the onset of fever. It was noted that delays in arriving at a diagnosis were occasioned for the most part by the late involvement of organs likely

* Petersdorf and Beeson: Medicine, 40, 11, February 1961.

to provoke characteristic manifestations, namely the lung, the pericardium and the meninges.

The next largest number of cases in the group of infections were the 7 cases that pertained to the liver and biliary tract. Five of these had acute cholecystitis and cholangitis. The other two had large single liver abscesses of cryptogenic origin. The diagnosis was made at laparotomy in 4 and at autopsy in 2. In the remaining case a liver abscess apparently resolved during a prolonged course of antibiotic therapy.

In the 3 patients with bacterial infection of the kidney none had symptoms of cystitis and pyuria was absent, scanty or intermittent.

Among the 19 cases of neoplastic disease 8 were in the lymphoma-leukemia category and 11 were carcinoma or sarcoma. The authors quote Briggs' review of 238 malignancies with fever unrelated to other causes present in 38 per cent and roughly 3 per cent of patients with visceral carcinoma have fever as the presenting complaint.

Among those 7 patients whose definitive diagnosis could not be established, 1 patient died several years later without a satisfactory understanding of the condition and the other 6 patients were in apparent good health at the conclusion of the study.

The means by which diagnosis was finally achieved in the 93 patients is important to consider. The cause of fever was not apparent until autopsy in 9 instances. This included 2 cases of monocytic leukemia and 2 with multiple pulmonary emboli. There were 1 each of miliary tuberculosis, liver abscess, subphrenic abscess, ascending cholangitis and abacteremic bacterial endocarditis.

Histologic examination of tissue and exploratory surgery stood out as diagnostic procedures in this study. There were 23 instances in which the diagnosis was made by needle or excisional biopsy and in 16 cases laparotomy or thoracotomy provided the needed information. Biopsy was used in 58 cases. It was diagnostic in 23, not diagnostic in 25. The initial biopsy was not diagnostic in 8 but subsequent biopsies were. Biopsy was not diagnostic and laparotomy was in 8 others. In this series 32 patients succumbed to the disease responsible for the fever. Twenty, including 6 in whom no diagnosis could be established, recovered without specific therapy.

In surveying the prognosis it is to be noted that 38 patients were eventually helped by specific medical and surgical therapy. The authors note, however, the significance of the fact that 7 of the 9 patients in whom the correct diagnosis was made only at autopsy had diseases for which there is effective treatment. The authors feel that it should be emphasized that most patients with fever of unknown origin are not suffering from unusual diseases but exhibit atypical manifestations of common diseases—tuberculosis, sepsis, cancer, blood dyscrasias, pulmonary emboli and rheumatic fever, etc. It was considered that attempts to obtain tissue for a diagnosis should be instituted early.

It is significant that among 70 patients reported by Geraci with fever of unknown origin only 30 had signs or symptoms referable to the abdomen. These were subjected to laparotomy and in 80 per cent the abdominal exploration provided the diagnosis. The authors feel that laparotomy should be performed in most jaundiced patients with long continued high fever of uncertain origin. A routine of laboratory tests, x-rays and biopsies is not regarded as the proper plan for the solution of this problem. As has been considered proper clinical procedure through the years each patient must be evaluated individually.

The comparisons made with four other analyses reported since 1930 allow certain general deductions. There has been a lessening of pyogenic infection of the varieties caused by Gram-positive cocci. Gram-negative enteric pathogens appear to be increasing. It is thought that these comparisons show that tuberculosis is still

important as a cause of prolonged pyrexia and that prevalence of the disease has not changed greatly despite the lowering of the morbidity and mortality. Cases of fever due to neoplastic disease constitute a relatively constant part of all five series compared. This is also true of the collagen diseases.

The deduction from this valuable report is that in fever of unknown origin the condition is manifesting itself atypically or has not had time to present classical development. The indication is for repeated and thorough study.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

IMPORTANT INSURANCE FACTS

The President of the Health Insurance Association of America said Feb. 12 the Administration's proposal for medical care to the aged should not be enacted because it would set up a massive and costly program to meet a relatively small need.

"Our goal should be to provide adequate programs to meet the real needs of the less fortunate members of our society," H. Lewis Rietz said. "Present programs afford this potential. The King-Anderson bill does not because it provides benefits to a large group with no distinction made between the needy, near-needy, and the rest of our society."

The insurance spokesman said the needs of the indigent and the medically indigent are being met through existing programs, such as the Kerr-Mills program, Old Age Assistance, and efforts on the state and local level. He added:

"All others of our senior citizens can provide for their health care needs through the voluntary system. Substantially more than half of these aged have already done so, and the remainder have a wide variety of plans and programs from which to pick."

Mr. Rietz, who also is Executive Vice President of the Great Southern Life Insurance Company, Houston, Texas, was the keynote speaker at the Association's annual Group Insurance Forum, held at the Drake Hotel, Chicago. The Association consists of 284 insurance companies responsible for approximately 80 per cent of the health insurance written by American insurance companies.

Mr. Rietz said that an estimated 136 million Americans are protected by health insurance, and that insurance companies cover more than half of the total.

Turning to the aged population, Mr. Rietz said hundreds of insuring organizations provide a "wide choice of economically sound coverages" to senior citizens. He continued:

"As proof of this the number of aged persons with health insurance increased from three million in 1952 to nine million eight years later. Insurance companies provide protection for 4¾ million of these persons."

As of mid-year 1961, he said, at least 53 per cent of the population age 65 or over had some form of health insurance "and many have coverage for broader benefits than would be provided under King-Anderson."

In attempting to prove the need for further federal intervention in the health care area, said Mr. Rietz, "advocates of the Social Security approach generally use emotional appeals and arithmetically correct but misleading statistics.

"As an example, they frequently cite the fact that 53 per cent of our citizens over age 65 have annual cash incomes of less than $1,000. In arriving at this figure, they include all welfare recipients and all women. They also neglect to state . . . that 59 per cent of all those under age 65 have annual cash incomes of less than $1,000.

"However, more accurate pictures of the financial position of the aged are available. The Blue Cross Association and the American Hospital Association conducted a study of health care that was particularly concerned with the ability of the aged to pay their hospital bills. The results of this extensive study were announced this past December. The report said, 'No evidence was found that an unpaid hospital bill problem exists among the aged'."

He added that the New York State Department of Labor recently made a detailed study of

income distribution in the state, and found that the percentage of persons over 65 who have existing indebtedness for medical or dental services is substantially lower than for younger age groups. The figures were two per cent to five per cent by age groups over 65 compared to 10 to 14 per cent in age groups where the family head was under age 56, said Mr. Rietz.

The insurance spokesman questioned the Administration cost estimates for the King-Anderson bill. He said:

"The Administration estimates that a tax of .5% on $5,200 earnings base would be adequate to finance the King-Anderson benefits. We believe that a tax of 1.66% on $5,200 would be necessary. How great an increase this will mean in social security can be illustrated in another way.

"Today a worker earning $4,800 pays $150 a year in direct social security taxes with his employer paying an equal amount. But with a proposed new $5,200 taxable earnings base, the present social security program with King-Anderson benefits added will result in a worker earning $5,200 paying $283.66 by 1968. This is an 89% increase in the employee's taxes in the space of six years.

"Under our present social security law, employee and employer taxes combined are now scheduled to reach $444 in 1968 for every employee earning $4,800 or more. With the proposed $5,200 taxable earnings base and the addition of King-Anderson benefits such taxes would reach at least $567 by 1968—an amount well in excess of 10% of the new earnings base."

A "sound, economical and equitable approach" to meeting the health care needs of the aged is through the present programs—federal, state and local, public and private—together with voluntary health insurance, said Mr. Rietz. He declared:

"The dynamic competition which exists among the more than thirteen hundred voluntary health insuring organizations in this country has been responsible for phenomenal progress in the past 20 years. Spared from governmental intervention, this competition will continue with an increasing number of companies offering senior citizen benefits on an ever broader basis, bringing still greater progress in financing the health care costs of our nation."

The information furnished above should be sufficient evidence to convince our members that the King-Anderson proposed bills under Social Security do not protect our elderly citizens who are in real need, but will force many citizens over 65 who do not need nor want this socialized assistance to accept it, and at the great increased social security tax rates necessary to carry out the covenants of these proposed bills. So, we urge all of our members to write their respective Senators and Congressmen, requesting them to oppose the passage of this legislation.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

QUACK ARTHRITIS 'CURES' A HUGE WASTE OF MONEY

Although medical science has not discovered the cause or cure of arthritis, an estimated 252 million dollars is wasted annually on quack cures and remedies, according to an article in Today's Health magazine, published by the American Medical Association.

"Ironically, the money wasted on useless treatment for arthritis far exceeds the private funds available for scientific research into the cause of arthritis and its cure," the article in the July Today's Health said.

Time and money wasted on such self-medication may delay proper medical treatment, it said, and delaying medical treatment may result

in needless crippling of arthritis patients.

Time is "very important" in the treatment of arthritis, the article pointed out. Early and prompt treatment of arthritis can prevent crippling in 70 per cent of the persons affected, it said.

"There is no specific cure for arthritis and only gout and infectious arthritis are completely controllable at the present time," it said. "But the pain and swelling in most arthritic patients can be controlled by sound medical treatment, and the joints and muscles can be rehabilitated by physical therapy."

Many of the quack arthritis "cures" are harmless in themselves, the article said. However, some of the misrepresented products "can be quite harmful for arthritics, or even normal persons," it said.

One such product cited in the article was sea water, condensed to 10 times its normal concentration of minerals, and sold throughout the country for $3 a pint.

Dr. R. W. Lamont-Havers, medical director of the Arthritis and Rheumatism Foundation, New York City, told Today's Health some patients who have been taking sea water suffer "water logging" of the body.

"This is caused by the excessive intake of salt and could have very serious consequences in patients with heart and kidney disease," he said. "There is also danger of infection from unpasteurized sea water."

Nutritional and curative claims made for commercially prepared mineral sea salts have been debunked by the A.M.A. and the National Better Business Bureau.

Some 1,200 types of treatment are being offered to arthritis victims with misleadingly implied benefits, including "immune milk," alfalfa tablets and various expensive mechanical devices, the magazine article said.

"Among the cruel results of the promotion of misrepresented products," Dr. Lamont-Havers said "are not only false hopes raised in the minds of the nation's arthritis victims, but public pressure to devote valuable research time to testing theories which show no promise of being effective."

Stressing early recognition of arthritis, the article said the two most common forms are rheumatoid arthritis and osteoarthritis, each of which afflicts more than five million persons in this country alone.

Early warning signs of rheumatoid arthritis are pain and swelling of the joints, persistent muscular aches and pains, unexplained weight loss, fever, and weakness, it said. Osteoarthritis may start with noticeable pain and stiffness in the lower back, knees, and other joints, and tingling sensations in the fingertips, it said.

The article made the following suggestions on how to avoid wasting money on worthless arthritis products:

—Consult a physician who has access to the latest knowledge about sound, scientific treatment.

—Do not buy any product, drug or device without first consulting a physician.

NEW OFFICERS

Section on Ophthalmology and Otolaryngology Southern Medical Association

The Section on Ophthalmology and Otolaryngology of the Southern Medical Association, at their meeting in Dallas, Texas, November 5-9, 1961, elected the following new officers for 1962:

Chairman: Dr. Samuel McPherson, Durham, North Carolina; Chairman-elect: Dr. Harold Tabb, New Orleans, Louisiana; Vice-Chairman, Ophthalmology: Dr. Kenneth Whitmer, Miami, Florida; Vice-Chairman, Otolaryngology: Dr. James R. Chandler, Miami, Florida; Secretary: Dr. Albert C. Esposito, Huntington, West Virginia; Associate Secretary: Dr. Neil Callahan, Portsmouth, Virginia.

Elected to the Executive Committee were: Dr. Edley Jones, Jackson, Mississippi; Dr. Alston Callahan, Birmingham, Alabama; Dr. Philip Lewis, Memphis, Tennessee; Dr. Lyle Sellers, Dallas, Texas; Dr. Ben Senturia, St. Louis, Missouri and Dr. Jack Jervey, Greenville, South Carolina.

Automatic members of the Executive Committee are the three immediate past presidents: Dr. Slaughter Fitz-Hugh, Charlottesville, Virginia; Dr. George Haik, New Orleans, Louisiana and Dr. Miles Lewis, New Orleans, Louisiana.

The next meeting will be held in Miami Beach Florida, November 12-17, 1962. For further information please contact the secretary, Dr. Albert C. Esposito, Huntington, West Virginia.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next oral and clinical examinations (Part II) for all scheduled candidates are being held at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board, April 9 through 14, 1962.

New and reopened applications, and requests for re-examination in 1963 will be accepted in the office of the Executive Secretary up to July 1, 1962 which has been advanced from August the first. Candidates are urged to apply as soon as possible before that date. New applicants, re-opened candidates, and all re-examinees are required to submit a duplicate list of hospital dismissals for the preceding twelve months, before the deadline date of July 1.

Current Bulletins outlining present requirements, and application forms may be obtained

by writing to: Robert L. Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

MEDICAL LIBRARY ASSOCIATION CONFERENCE

The sixty-first annual meeting of the Medical Library Association will be held in Chicago June 4-8, 1962 at the Sheraton-Chicago Hotel. Chairman of exhibits is Charles Hughes, Library of Medical Sciences, University of Illinois, 1853 W. Polk St., Chicago 12. Convention chairman is Donald Washburn, D.D.S., American Dental Association, 222 E. Superior St., Chicago 11.

THE WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The West Virginia Academy of Ophthalmology and Otolaryngology has announced that its Fifteenth Annual Meeting will be held at the Greenbriar Hotel April 23-25, 1962. Guest speakers are as follows: Dr. Ramon Castroviejo of New York City; Dr. Frank D. Costenbader of Washington, D. C.; Dr. Kelvin A. Kasper of Philadelphia, and Dr. Fred R. Builford of Houston.

Mr. Philip Salvatori of Obrig Laboratories will show the advanced techniques of contact lens fitting and discuss problem cases including keratoconus and aphakia.

A registration fee of $25.00 for associate members will cover all the social and scientific sessions. The enjoyable facilities of the Greenbriar Hotel will be available at convention rates for the weekend preceding the meeting. Predinner social hours for registrants and wives will be sponsored by the Academy the evenings of April 23-24.

For additional information write to Worthy W. McKinney, Secretary-Treasurer, Professional Park, Beckley, W. Va., or write directly to Reservation Manager, The Greenbriar Hotel, White Sulphur Springs, West Virginia.

SOCIETY OF NUCLEAR MEDICINE

The Society of Nuclear Medicine, Southwestern Chapter, will hold its Seventh Annual Meeting in Little Rock, Arkansas, March 23-25, 1962, at the Hotel Marion.

Inquiries concerning this meeting should be addressed to: Dr. Howard J. Barnhard, Program Chairman, Radiology Department, University of Arkansas Medical Center, Little Rock, Arkansas.

Doctors and individuals interested in this field are cordially invited to attend. The Annual Banquet will be held Saturday evening, March 24, 1962.

BOOK REVIEWS

Cutaneous Manifestations of the Reticuloendothelial Granulomas; by Samuel Mitchell Bluefarb, C. C Thomas, 1960, 442 p. $14.50.

This is the fourth in the series of monographs edited by Dr. Bluefarb concerned with diseases of the reticuloendothelial system. It fulfills a long-standing need for a concise current reference on the reticuloendothelial granulomas not met by standard texts of dermatology or internal medicine.

The book is divided into four chapters; the lipidoses, the reticuloendothelial granulomas, sarcoidosis and mastocytosis (urticaria pigmentosa). Each chapter was written by internationally recognized authorities.

In the introduction to the lipoidoses, Dr. Urbach gives a brief but comprehensive and easily understood review of lipid biochemistry and physiology.

Drs. Israel, Beerman and Sones appropriately stress the clinical features of sarcoidosis with numerous x-rays and clinical photographs, and summarize the current concepts of the altered immunological response in this disease.

Drs. Sagher and Even-Paz give an excellent review of mast cell histochemistry and physiology and emphasize the systemic aspects of mastocytosis.

Clinical illustrations are plentiful, although not always completely clear. Histopathology is adequately emphasized with numerous excellent photomicrographs. The bibliography is current and extensive.

This book reaches the same high degree of excellence as Dr. Bluefarb's preceding works and like them is sure to remain one of the outstanding references on this group of diseases. It will be of particular value to those dermatologists, internists, and pathologists with a special interest in this field.

ROBERT M. FINE, M. D.

Heredity in Ophthalmology; by Jules Francois, C. V. Mosby Company, 1961, 731, p. $23.00.

With the advent of better methods of treating infectious diseases and better techniques of ocular surgery, diseases of a genetic nature have become increasingly important as a cause of blindness. Thus, a book concerning the hereditary aspects of ocular diseases, by an ophthalmologist, is rather timely. As Dr. Francois points out, "Heredity plays an important role since at

least 246 pathological genes express themselves in ocular abnormalities." The original work was written in French and the English translation was performed by Mr. Frank Law.

It has become increasingly apparent that early detection of glaucoma, before visual impairment occurs, is very important. The author points out that glaucoma is due to a dominant gene of delayed manifestation. Open angle glaucoma is due to a gene which affects the facility of outflow. Angle closure glaucoma is due to a gene that causes a tendency toward narrowing of iridocorneal angle. Within a family, glaucoma is generally of the same type. The author suggests that the beginning of glaucoma can be detected if the relatives are evaluated by means of tonometry. tonography, provocative tests and perimetry.

Regarding refraction, the author notes that the refractive error of monozygotic twins is usually identical and remains similar throughout life. There has been little evidence of unequal progression of refractive error in identical twins despite different occupations or other external factors. The author states that, "Exterior factors have no influence at all in myopia and . . . so-called myopia of the hard working school child is a myth." These observations certainly reduce the importance of ocular hygiene in ametropia.

Chapter 26, "Affections of the Cornea," is of especial interest in that the author describes several original syndromes, that is, Francois' Speckled Dystrophy of the Cornea, Francois' Cloudy Central Dystrophy, and Dermochondral Corneal Dystrophy. Chapter 29, "Cataracts," is of interest to both ophthalmologists and pediatricians as the author lists the various syndromes associated with congenital cataracts. The author records a syndrome which he originally described consisting of congenital cataract with microphthalmia, malformation of the head resulting in parrot face, aplasia of the lower jaw, hypotrichosis and dwarfism.

In brief, this book will certainly become a standard reference work. The bibliography is excellent. A minor criticism would be the advisability of including twelve chapters dealing with general aspects of genetics. Several syndromes that were originally described by the author are listed. The section on congenital cataracts and associated abnormalities is of interest to both ophthalmologists and pediatricians.

OLIVER H. DABEZIES, JR., M. D.

The Treatment of Tropical Diseases; by W. H. Jopling, M.R.C.P. (Lond.), M.R.C.P. (Edin), D.T.M. & H. (Eng.). John Wright and Sons Ltd., 1960. The Williams & Wilkins Co., exclusive U. S. agents. 202 p. $5.00.

This little book has a very unimpressive exterior which with its rough paper promises little to the reader. It is a pleasant surprise to find very useful information stuffed into its 188 pages. Limited to treatment, the discussion successfully avoids the pitfalls of theoretical argument about epidemiology and pathogenicity, which so complicates the field of tropical medicine. One other needless argument is evaded by the author's failure to define "tropical diseases." Nevertheless, his selection of diseases for the book would probably meet with the approval of most workers in this field. There is practically no presentation of "pros" or "cons" regarding one method of treatment as compared with another. Outmoded drugs are eliminated from consideration, but where there is some doubt as to which treatment is most effective, the reader is given a choice of methods. This may, however, be done so as to diplomatically discourage the use of an unestablished method, as for example, the use of mepacrine as compared with emetine in treatment of ameboma. One of the principal provisions of the booklet is the listing of companies producing or distributing drugs discussed. This takes care of the embarrassing situation so frequently encountered in tropical medicine practice in which the physician knows which drug is required but not where to get it.

Adversely, it must be remarked that in a few instances the author's comment is uncritical. Primarily this may apply to his failure to recognize the incidence among less stoic ethnic groups of side effects to drugs such as dithiazanine or bephenium. The treatment of ascariasis by oxygenation of the bowel is recommended as simple and cheap. To so describe this technic is difficult for the reviewer to accept but contradiction would depend on its trial in this country.

RODNEY C. JUNG, M. D.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

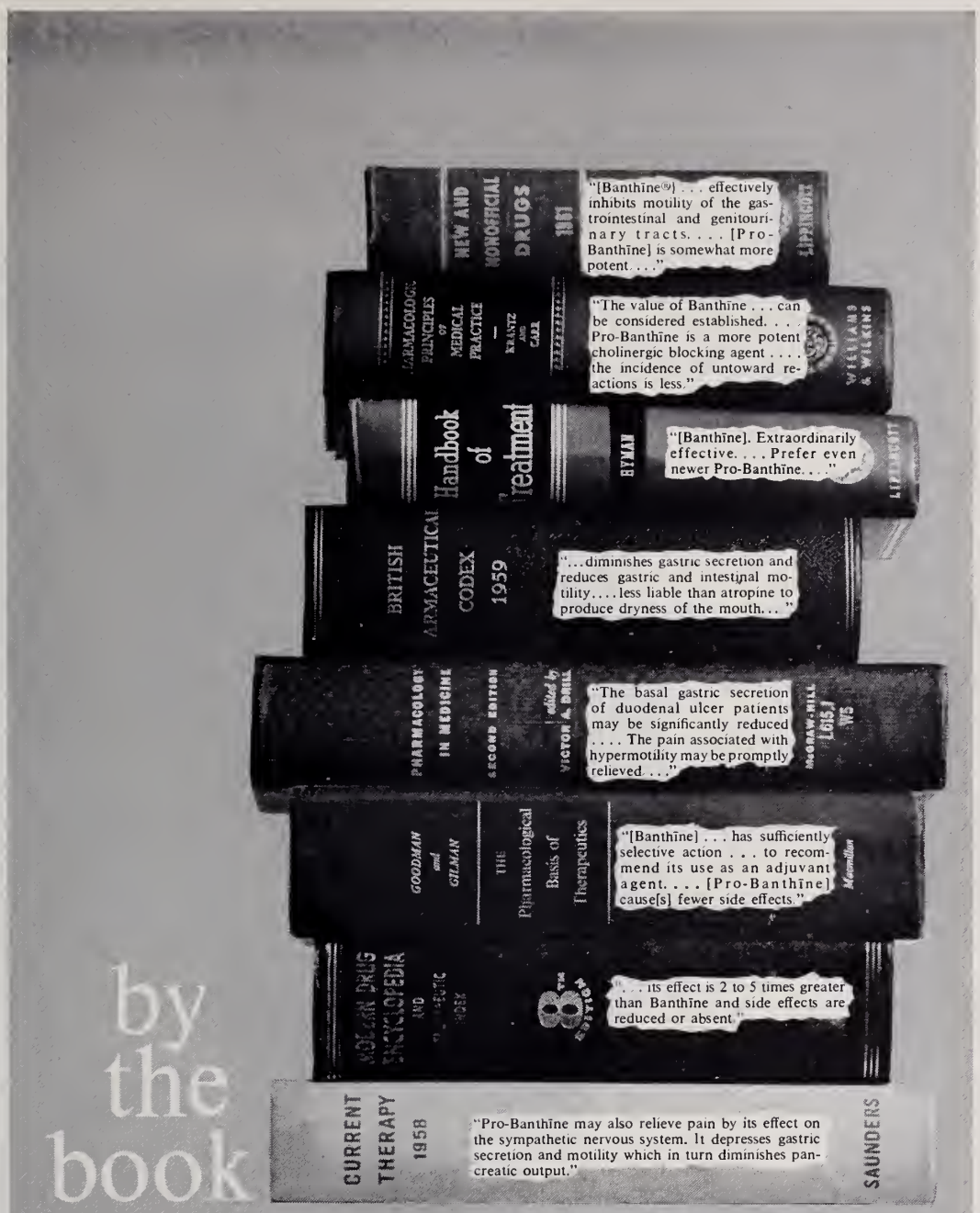
Doubleday & Co., Inc., N. Y.: The Science of Dreams: An analysis of what you dream and why, by Edwin Diamond.

The C. V. Mosby Co., St. Louis: Postpartum Psychiatric Problems, by James Alexander Hamilton, M. D.; Atlas of Clinical Endocrinology (2nd edit.), by H. Lisser, M. D., and Roberto F. Escamilla, M. D.

W. B. Saunders Co., Phila.: Carcinoma of the Cervix, by John B. Graham, M. D., Luciano S. J. Sotto, M. D., and Frank P. Paloucek, M. D.; Textbook of Endocrinology, edited by Robert H. Williams, M. D., with Contributions by Twenty-One Authorities (3rd edit.).

Charles C Thomas, Publisher, Springfield, Ill.: The Chemistry and Physics of Anesthesia, by John Adriani, M. D. (2nd edit.).

Vantage Press, Inc., N. Y.: Irritation and Counterirritation: A Hypothesis About the Autoamputative Property of the Nervous System, by Adolphe D. Jonas, M. D.



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In the emergent situation, VISTARIL, administered parenterally, is a valuable aid to the physician in managing patients who escape psychic conflict via alcohol. According to Weiner and Bockman,[2] who obtained beneficial results in 81% of 175 patients studied, hydroxyzine (VISTARIL) may well be considered a tranquilizer of choice in the management of the acutely agitated alcoholic.

1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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See "IN BRIEF" on the next page.

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INDICATIONS: VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

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Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

PRECAUTIONS: Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

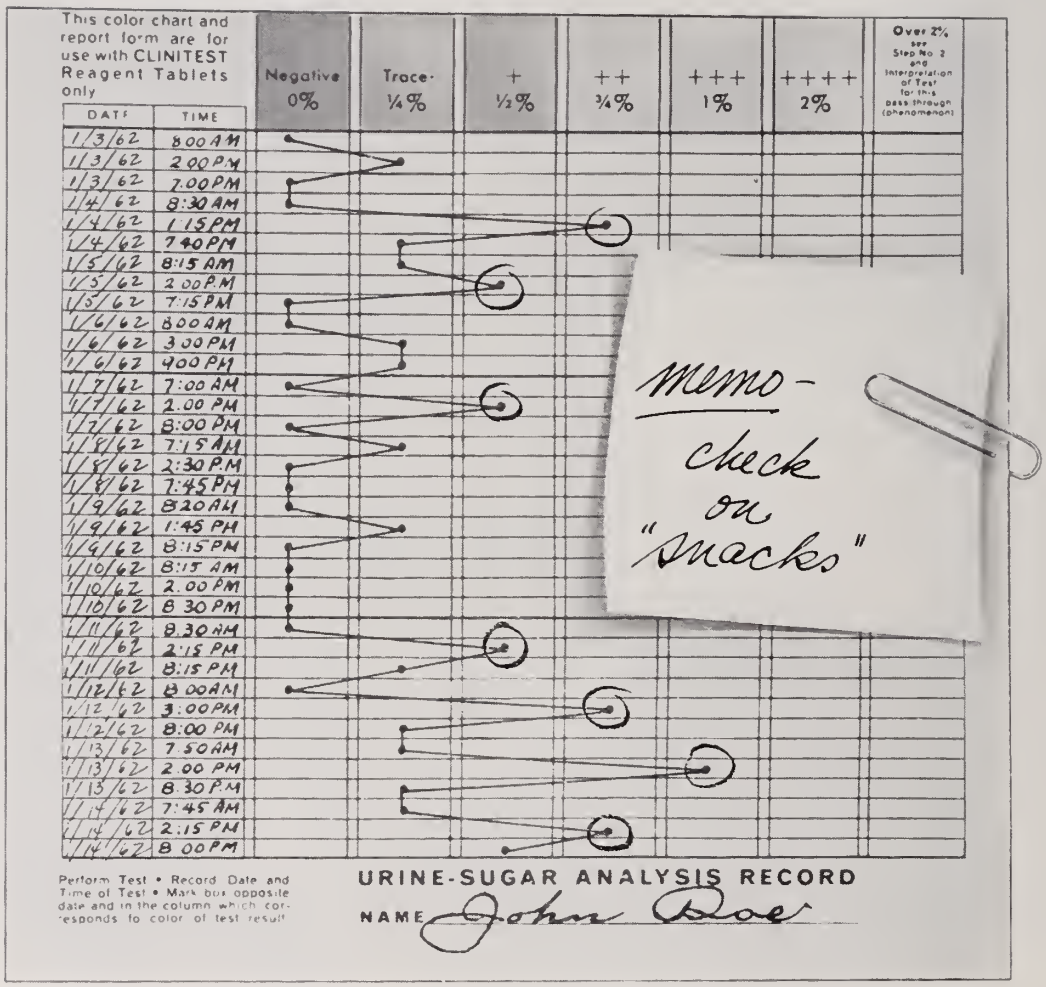
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"nutrition...present as a modifying or complicating factor in nearly every illness or disease state"[1]

1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

cardiac diseases "Who can say, for example, whether the patient chronically ill with myocardial failure may not have a poorer myocardium because of a moderate deficiency in the vitamin B-complex? Something is known of the relationship of vitamin C to the intercellular ground substance and repair of tissues. One may speculate upon the effects of a deficiency of this vitamin, short of scurvy, upon the tissues in chronic disease."[2] 2. Kampmeier, R. H.: Am. J. Med. 25:662 (Nov.) 1958.

arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]
3. Fernandez-Herlihy, L: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

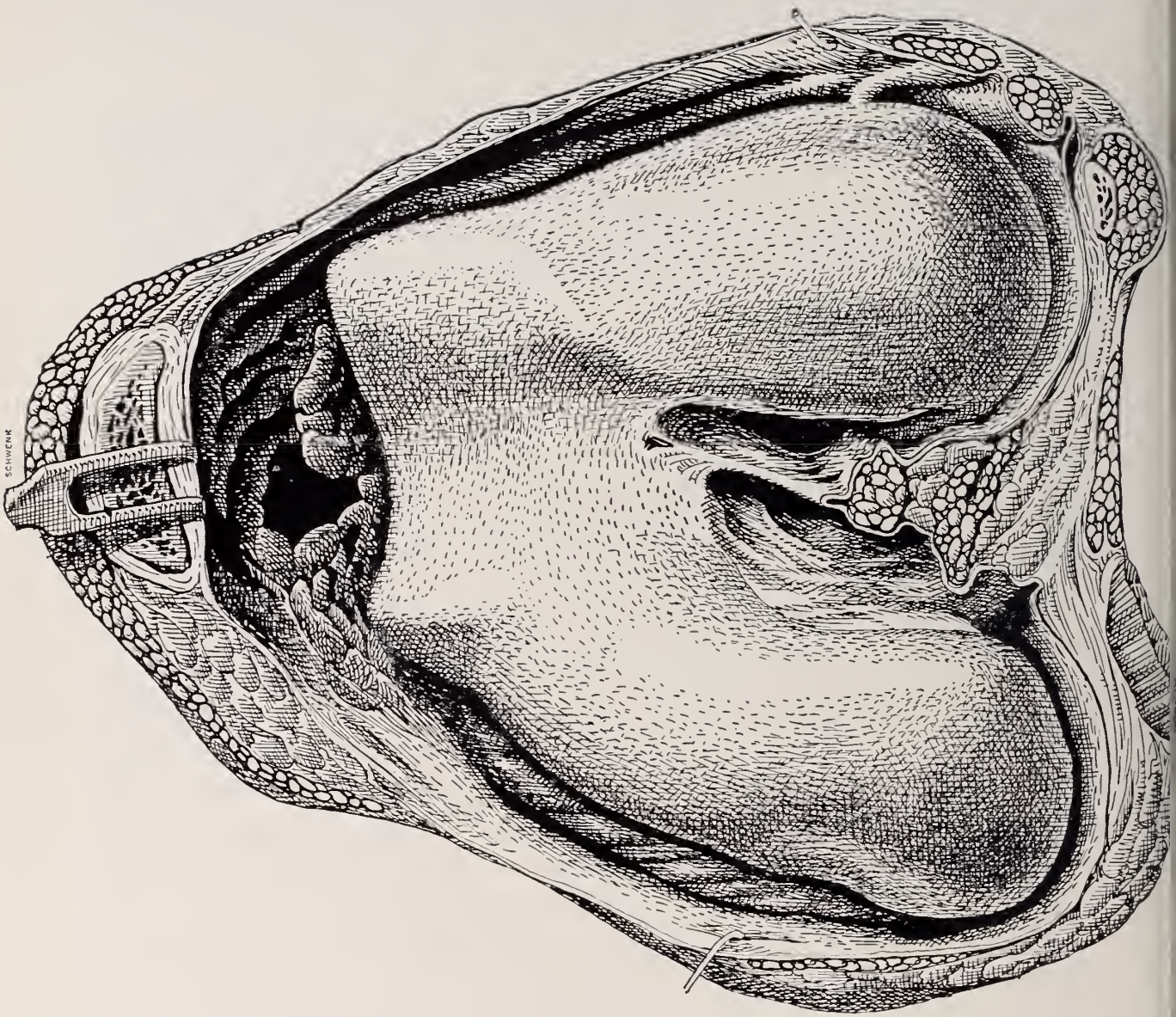
digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57.

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W., and Fong, T.C.C. In Stieglitz, E. J.: Geriatric Medicine, 3rd edition. J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]
8. Duncan G. G.: Diseases of Metabolism 4th edition W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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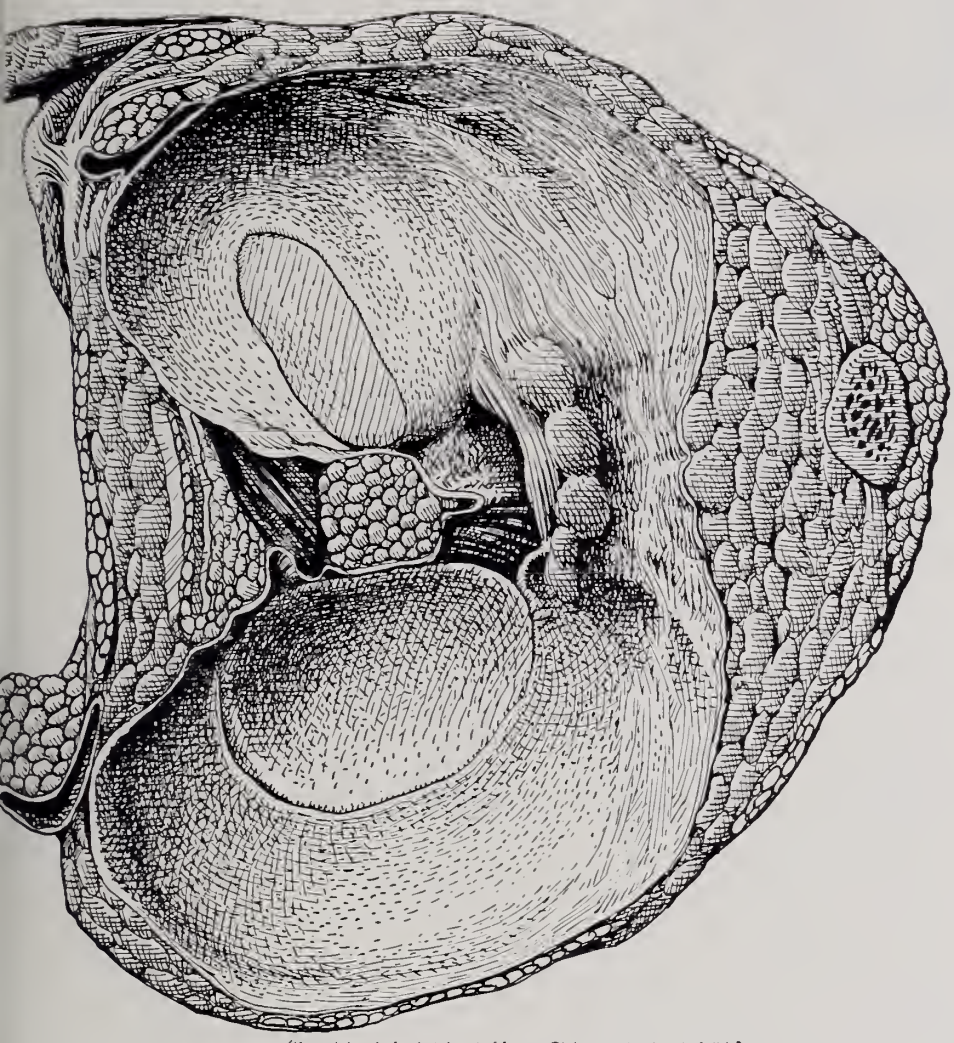
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ARISTOCORT provides unsurpassed anti-inflammatory control without sodium retention or edema — without the undesirable psychic stimulation and voracious appetite.

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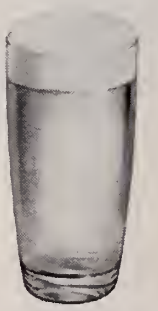
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Cooking with herbs spices up a patient's diet

How to help your patient stick to a low sodium diet

The secret ingredient in a successful diet is acceptance. Dishes that are low in sodium can gain flavor and appetite appeal from a variety of other herbs and seasonings. Broiled hamburger, for instance, tastes delicious when it's seasoned with thyme, marjoram and pepper. Rosemary, lemon and sweet butter turn broiled chicken into an elegant main dish. In fact, sweet butter can be used many ways —with tarragon on carrots, nutmeg on beans, oregano on tomatoes, savory on limas. Dieters find onions boiled with thyme have a delicious new flavor.



A glass of beer can add zest to a patient's diet

Sodium 7 mg/100 grm.
17 mg/8 oz. glass
(Average of American Beers)

United States Brewers Association, Inc.

For reprints of this and 11 other diet menus, write us at 535 Fifth Avenue, N.Y. 17, N.Y.

Profile of a multivitamin



New Vi-Daylin Chewable —with entrapped flavor

New Formula

In recognition of recent medical thinking, we've reduced the vitamin D in our formula from 20 mcg. (800 units) to 10 mcg. (400 units). At the same time, we've increased the vitamin C content from 40 mg. to 50 mg. per tablet and per 5-cc. lemon-candy teaspoonful.

All Other Elements Remain at Their Previous Level.

Vitamin A (3000 units)	0.9 mg.
Thiamine Mononitrate	1.5 mg.
Riboflavin	1.2 mg.
Cobalamin (B_{12})	3 mcg.
Nicotinamide	10 mg.
Pyridoxine Hydrochloride	1 mg.

New Low Price

In quantities of 100 tablets our new Chewable costs less than 4¢ a tablet and the normal dosage is one tablet daily. No financial hardship for your patients when you prescribe or recommend Vi-Daylin.

New Shape, New Color, New Bottle

New Vi-Daylin Chewable tablets are football shaped. This shape got a high degree of acceptance in our taste-tests and seems to have an intrinsic interest for children. The orange color ties in with the mild, sweet citrus flavor. And the wide-mouthed new bottle looks handsome on the table.

Taste-Test New Vi-Daylin Chewable Yourself

Won't you taste-test new Vi-Daylin Chewable multivitamins yourself? We're certain you'll be pleasantly surprised at their sweet good taste. They're the candy-flavored multivitamins with *entrapped flavor* . . . little folks taste the candy flavor, never the vitamins.

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VI-DAYLIN—Vitamins A, D, B_1, B_2, B_6, B_{12}, C, and Nicotinamide, Abbott



f you had to make your own children's multivitamins

. chances are you'd try to make them very much like our new Vi-Daylin® Chewable with Entrapped Flavor. ntrapped Flavor means a better tasting chewable children's multivitamin; one with no vitamin aftertaste. Here's ny: 1. We coat all the vitamins in a digestible film that does not dissolve until it reaches the gastrointestinal tract. his means that unpleasant strong vitamin tastes are not released in the mouth, but in the g-i tract where they e most quickly absorbed. 2. We make certain that every Vi-Daylin Chewable tablet tastes citrus sweet nd good to every patient, everytime; we coat the flavoring oils in each tablet in a water soluble film. This m dissolves immediately in the mouth, releasing the full bouquet of our citrus-candy flavoring agents. Now ou know why little patients always taste the flavor, never the vitamins, when you prescribe ew Vi-Daylin Chewable. And the formula's all you'd expect, with reasonable amounts of A & D. aste test them yourself and you'll prescribe **VI-DAYLIN CHEWABLE** regularly and soon.

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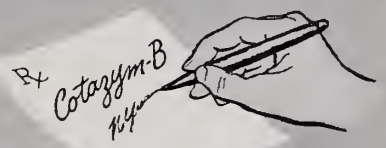
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5 TIMES GREATER PROTEIN-DIGESTANT PROTEINASE (TRYPSIN) ACTIVITY[2]

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Dosage: 1 or 2 tablets with water just before each meal.

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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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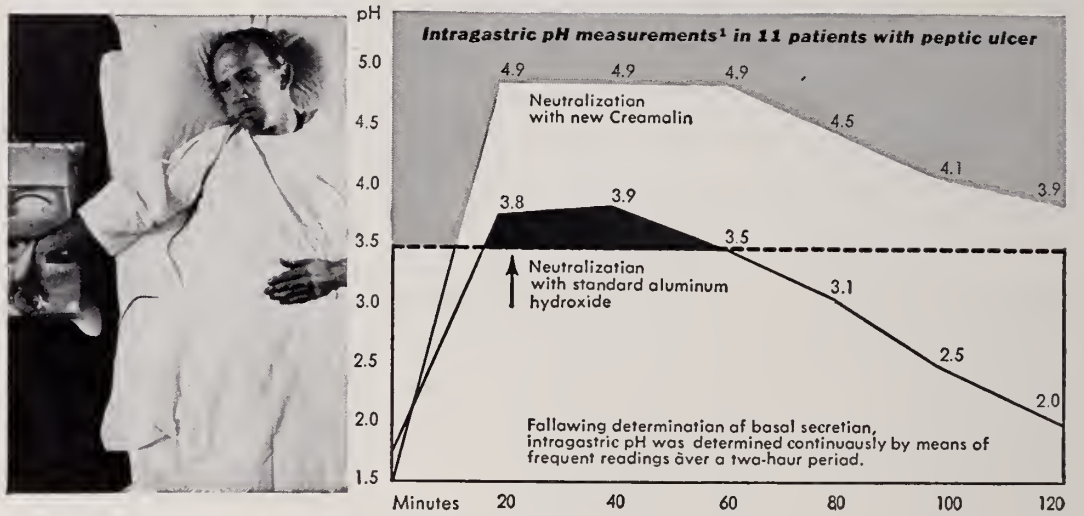
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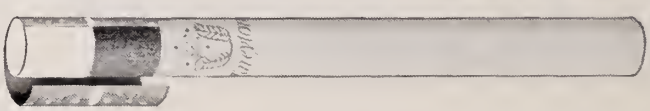
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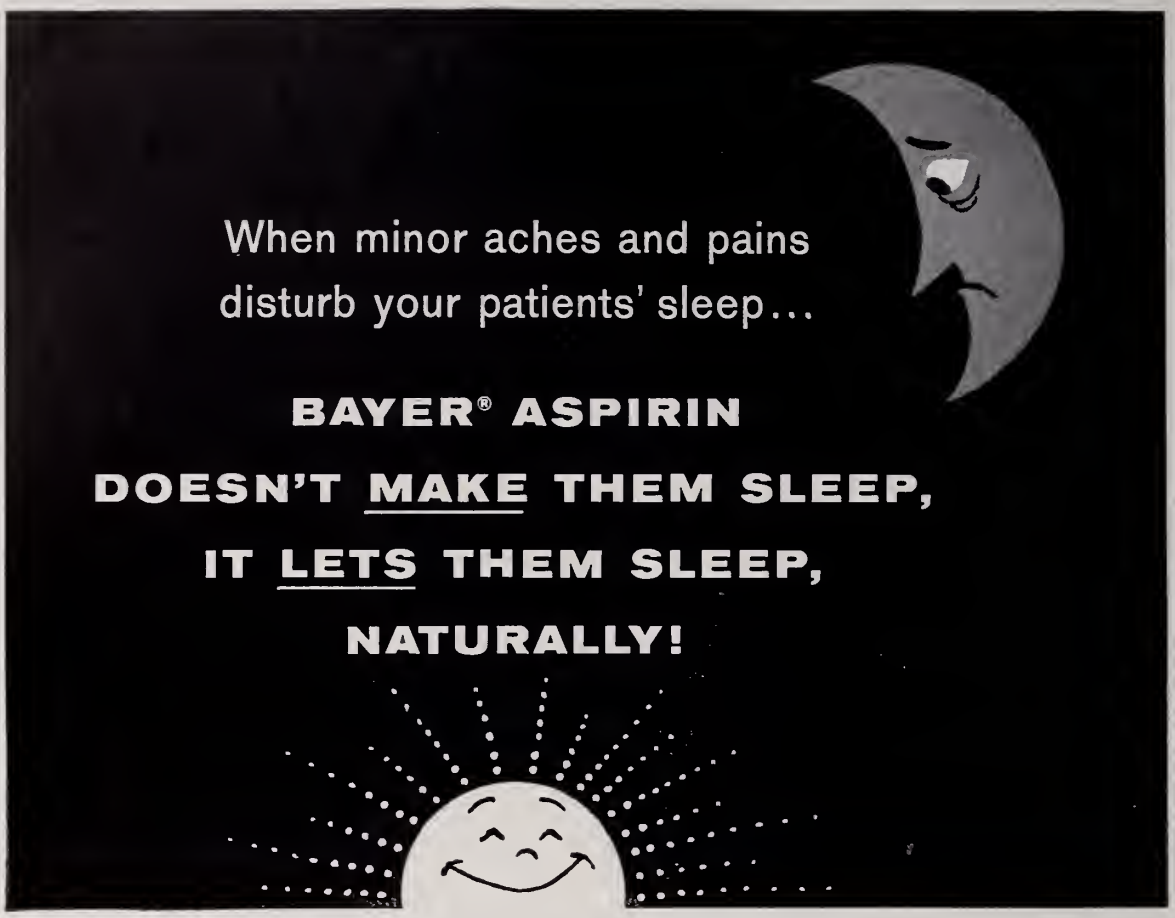
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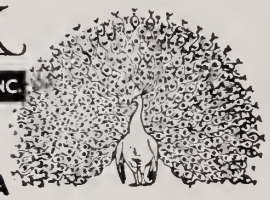
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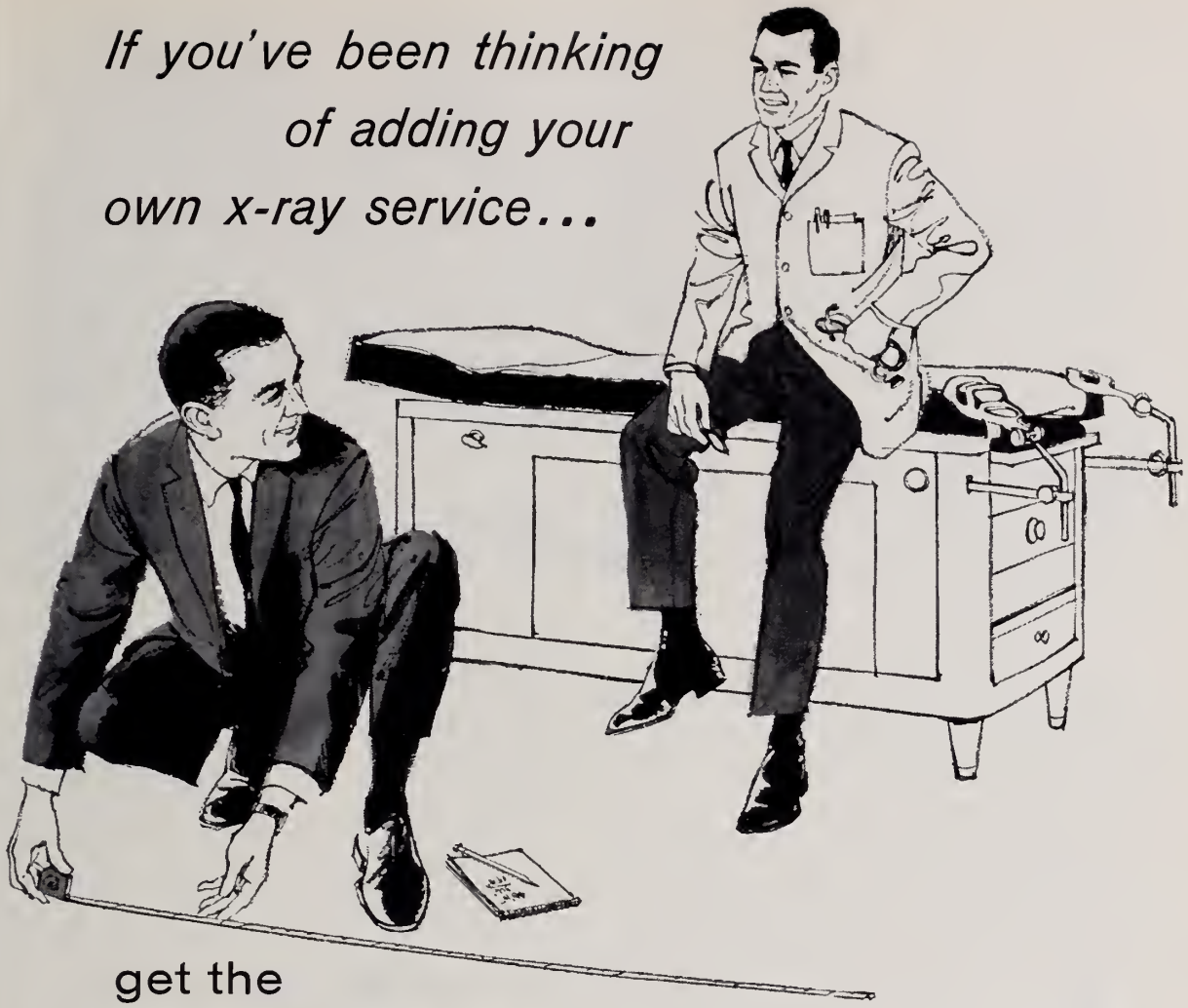
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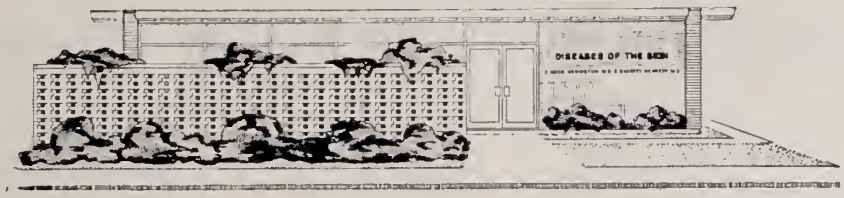
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The Cancer Commission of the Louisiana State Medical Society

1962 IS CANCER PROGRESS YEAR

WHEREAS, 1962 marks the twenty-fifth anniversary of the following two significant events in the American struggle to conquer Cancer:

1. Enactment of the National Cancer Institute Act which created the National Cancer Institute, and

2. Launching by the American Cancer Society of its first nationwide public education campaign out of which was to come a broad program of education, research and service through voluntary support, and

WHEREAS, the American Cancer Society was a major supporter of the National Cancer Institute Act and subsequently supported development and growth of the National Cancer Institute, and

WHEREAS, the National Cancer Institute and the American Cancer Society have demonstrated the need for complementary efforts by the people, on a voluntary basis, and the government, in the attack on this grave disease, and

WHEREAS, the fight against cancer has made remarkable progress since 1937 in the research laboratory, the hospital, the doctor's office, and the public's attitude; therefore

RESOLVED, that the American Cancer Society join with the National Cancer Institute in celebrating twenty-five years of the attack against cancer during the year 1962, which shall be called Cancer Progress Year, and further

RESOLVED, that the purpose of this Cancer Progress Year be to report to the public on where science now stands in cancer research, to intensify the efforts being made to persuade the public to act for its own protection, to improve the care of the cancer patient, and to step up all programs to speed the final victory over cancer.

NOTE: The above resolution was adopted by the ACS Board of Directors meeting in Seattle, June 8, 1961.

AMERICAN CANCER SOCIETY

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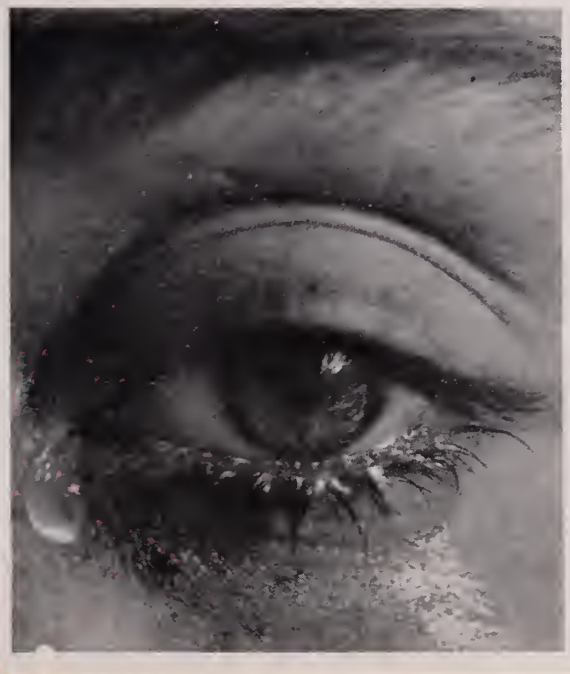
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REPORTABLE DISEASES

Reproduced below is the official list of reportable diseases for the State of Louisiana. Group 1 is the usual reportable diseases. This group is subdivided into Bacterial, Viral, Rickettsial, Protozoan, Parasitic, Venereal and Other. In this last sub-group "Other" are Cancer and Occupational Diseases. Although these are not rightly classified as communicable diseases, reports are required purely for statistical purposes. In Group 2 is a listing of the uncommon diseases which, if they occur, are of serious nature and epidemiological importance—such as Cholera, Plague, Malaria, Yellow Fever, etc. Group 3 consists of a list of those diseases which need not be reported individually or when seen in small numbers. Group 3 diseases should only be reported when seen in unusual numbers and then only by the number of cases seen, not by individual name. Group 4 consists of a single disease, i.e., Rabies in Animals, and this should be reported only following laboratory confirmation.

All reports of communicable diseases by the private physician to the State Board of Health are considered confidential information. The occurrence of any of the following diseases should be reported on Form PHS-2430 to your Local Health Unit or, if you prefer, a telephone call to the Unit will suffice. Supplies of these forms for use in confidential case reporting may be obtained from the Health Unit in your parish or from the State Board of Health, State Office Building, 325 Loyola Avenue, New Orleans.

REPORTABLE DISEASES

GROUP 1—**BACTERIAL**

1. Brucellosis (Undulant Fever)
2. Diphtheria
3. Meningococcal Meningitis and Meningococcemia
4. Salmonellosis (includes Paratyphoid and all other Salmonella)
5. Pertussis (Whooping Cough)
6. Rheumatic Fever
7. Shigellosis
8. Streptococcal Sore Throat (includes Scarlet Fever
9. Tetanus
10. Tuberculosis—Pulmonary
11. Tuberculosis—Other Types (Specify)
12. Tularemia
13. Typhoid Fever

VIRUS

14. Infectious Encephalitis (Primary Virus Mosquito-borne)
15. Infectious Hepatitis (includes Serum Hepatitis)
16. Measles
17. Poliomyelitis—Paralytic
18. Poliomyelitis—Non-Paralytic
19. Rabies in Man

RICKETTSIAL

20. Rocky Mountain Spotted Fever
21. Typhus Fever (Endemic)

PROTOZOAN

22. Amebiasis

PARASITIC

23. Trichinosis

VENEREAL

24. Chancroid
25. Gonorrhea
26. Granuloma Inguinale
27. Lymphopathia Venereum
28. Ophthalmia Neonatorium (Gonorrheal Ophthalmia)
29. Syphilis

OTHER

30. Cancer
31. Occupational Diseases (Classify by Cause) (Report Dermatoses only if two or more cases)

GROUP 2—**ANY case of UNCOMMON DISEASE**

32. Actinomycosis
33. Anthrax
34. Botulism
35. Cholera
36. Dengue
37. Glanders
38. Histoplasmosis
39. Leprosy
40. Leptospirosis (includes Weil's Disease)
41. Malaria
42. Plague
43. Psittacosis
44. Q. Fever
45. Rat-Bite Fever
46. Relapsing Fever
47. Smallpox
48. Toxoplasmosis
49. Trachoma
50. Typhus Fever (Epidemic)
51. Yellow Fever

GROUP 3—**Report when occurring in UNUSUAL NUMBERS (Need not be reported individually by name)**

52. Ascariasis
53. Chickenpox
54. Conjunctivitis, acute infectious (pink eye)
55. Diarrhea of new born (epidemic)—if 2 or more cases
56. Food Poisoning
57. German Measles
58. Hookworm
59. Impetigo Contagiosa
60. Influenza
61. Mumps
62. Ringworm of the Scalp
63. Scabies

GROUP 4—**Reportable only by Laboratory Examination**

64. Rabies in Animals



Louisiana State Board of Health

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President



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pHisoHex is available in unbreakable squeeze bottles of 5 oz. and 1 pint—and in combination package with pHisoAc Cream.

1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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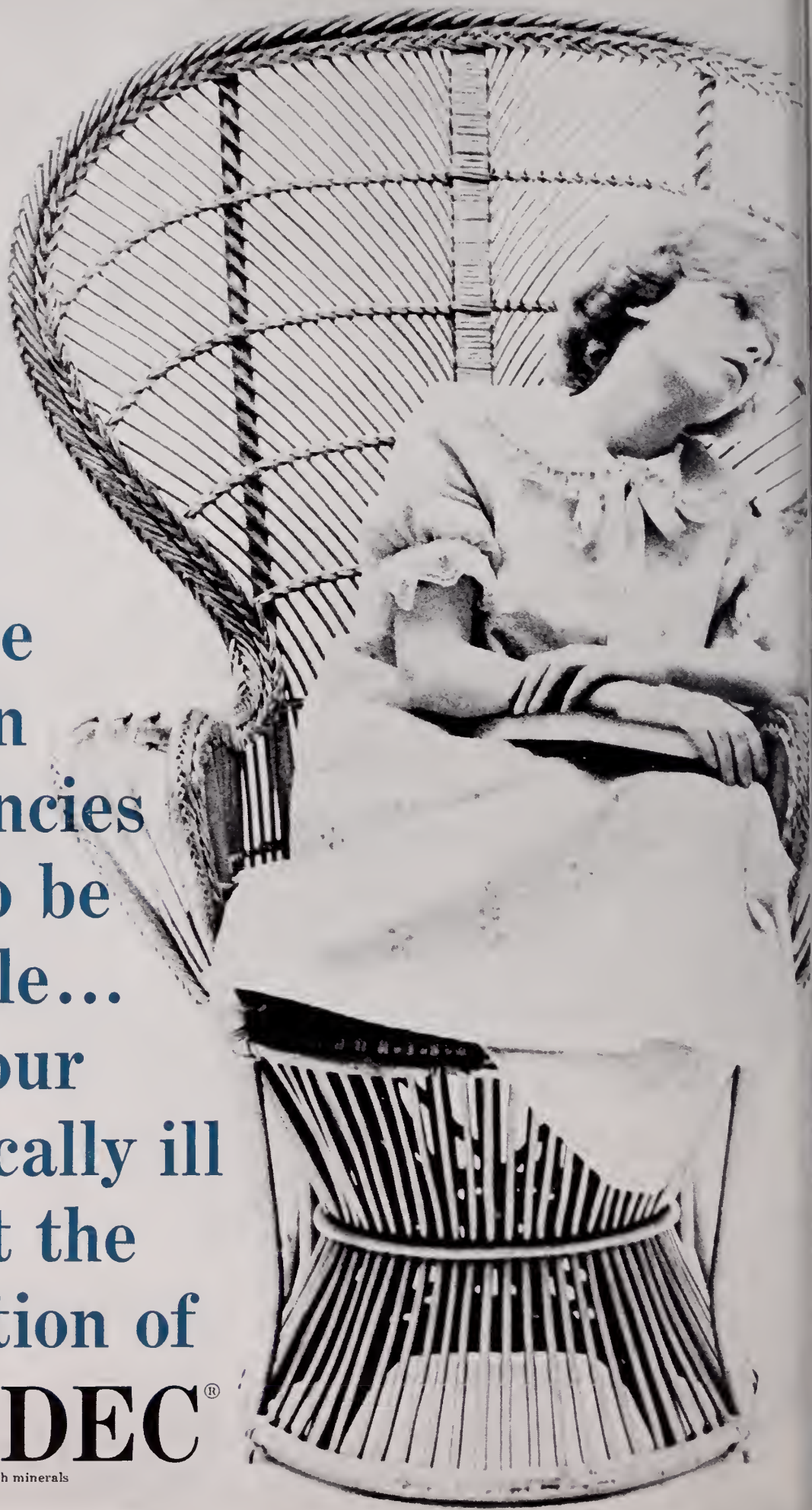
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		Phenobarbital (⅛ gr.)	8.1 mg.

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References: 1. Carpenter, E. B.: South. M. J. 51:627, 1958. 2. Hudgins, A. P.: Clin. Med. 8:243, 1961. 3. Lamphier, T. A.: J. Abdomin. Surg. 3:55, 1961. 4. Levine, I. M.: Med. Clin. N. America 45:1017, 1961. 5. Meyers, G. B., and Urbach, J. R.: Penna. M. J. 64:876, 1961. 6. Perchuk, E., Weinreb, M., and Aksu, A.: Angiology 12:102, 1961. 7. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 8. Schaubel, H. J.: Orthopedics 1:274, 1959. 9. Steigmann, F.: Am. J. Nursing 61:49, 1961.

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[1]**Sollmann's Manual of Pharmacology,** 8th ed., 1957, p. 507.
[2]**Modern Drug Encyclopedia,** 7th ed., 1958, p. 757.

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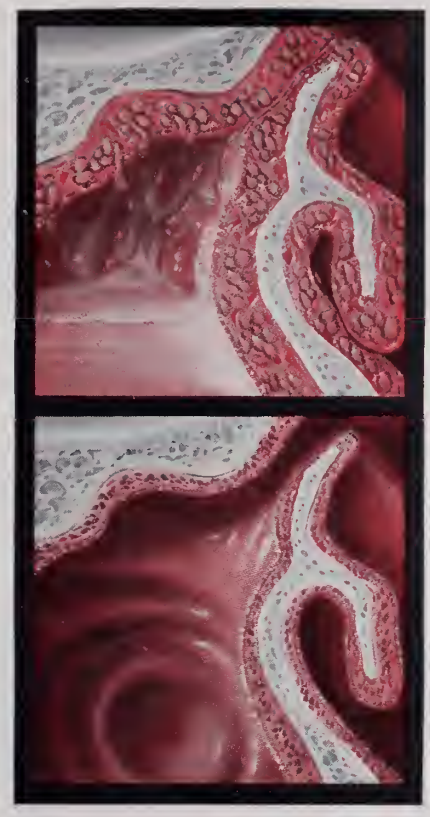
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1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

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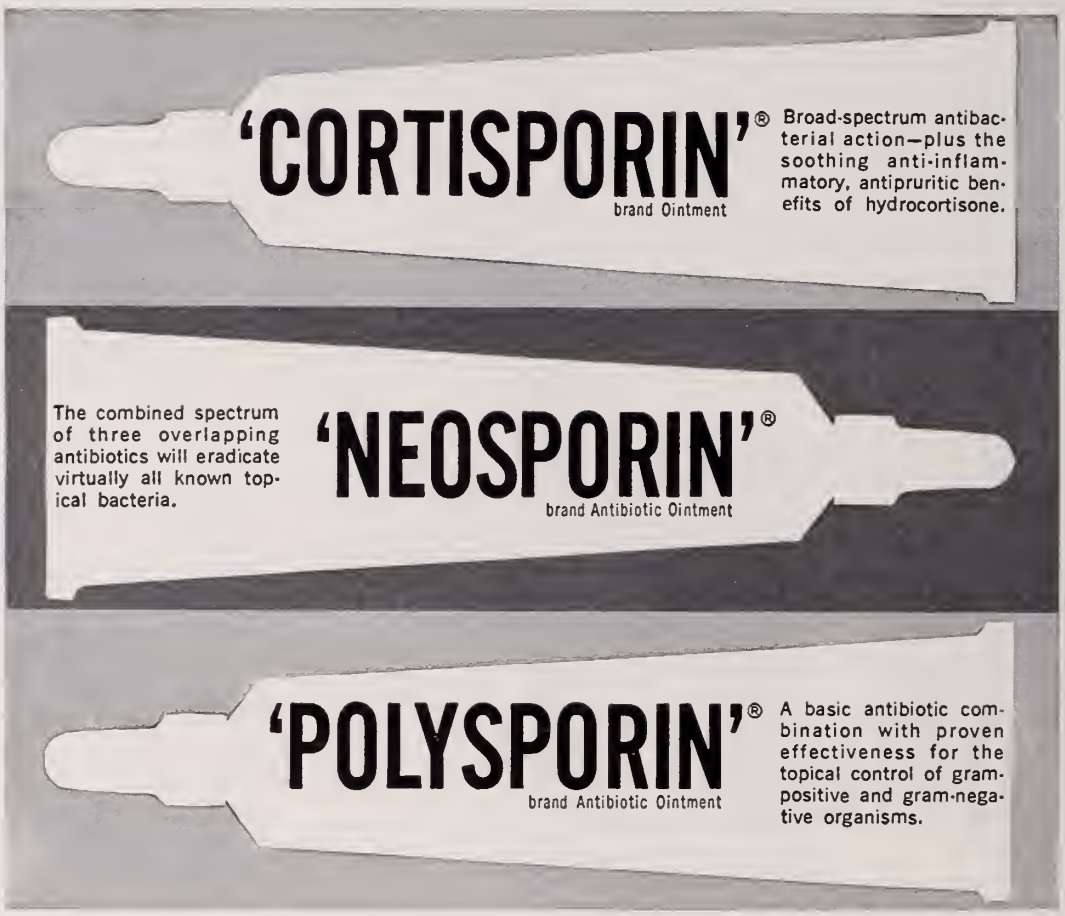
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*Schaefer, L. E.: Clin. Med. 8:1343, 1961.

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Experiences With Exfoliative Cytology*

• A description of findings, benefits, statistical value and the economic aspects of exfoliative, cytological examinations ("Pap" Smears) in 5097 women.

ROBERT CRAFT SMITH, M. D.†
WILLIAM H. STERNBERG, M. D.
New Orleans

IF it were possible to announce to the press today that a method had been discovered that would almost totally eradicate one of the two most common malignant diseases of women, we would be understandably elated. Yet, this is precisely what happened in 1943, when Papanicolaou [1] first reported his success in diagnosing cervical and other genital cancer by the vaginal smear technique. For the past eighteen years we have had at our command the means of eliminating as a threat to all women a disease that accounts for 28 per cent of all female malignant disease at Charity Hospital in New Orleans.

The Papanicolaou, or "Pap" smear, will detect exfoliated malignant cells from intraepithelial carcinoma (carcinoma in situ). At this stage the malignant change is confined to the covering epithelium where it is unlikely to metastasize and may remain preinvasive for many years. At this time the cure rate should closely approach 100 per cent. In addition, the lesion may not be visible to the examiner's eye and the cervix may appear to be normal and healthy.

Figures Support Value of Method

Lund [2] has recently reported his experiences with mass cytologic screening in Rochester, N. Y. over a ten year period. At the inception of his study, forty per cent of his positive smears proved to be intra-epithelial or pre-invasive carcinoma. Ten years later, the success of the program is well illustrated by the fact that the figure for these pre-invasive malignant lesions had risen to sixty per cent. Since intra-epithelial carcinoma approaches one hundred per cent in its curability, and since the five year survival rate for all stages of invasive carcinoma of the cervix has risen to about fifty percent, the "cure rate" in Rochester for those women with proven positive vaginal smears is eighty per cent. Nor is that figure the ultimate in what can be accomplished over a period of only a few years, if mass screening of *all* women over twenty years of age, and those women *under* twenty years of age who have had

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* Presented before the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 9, 1961, Hotel Roosevelt, New Orleans.

† From the Department of Obstetrics and Gynecology and the Department of Pathology, Tulane University School of Medicine and from Charity Hospital at New Orleans.

babies could be accomplished at least once a year. In such a situation, we could expect to approach a one hundred per cent cure rate!

We must all agree that this would be a highly desirable state of affairs, and it would be interesting to look at some of the reasons why we have failed to accomplish it.

Economics of Mass Screening Methods

First is the economic aspect of the question. It is our contention that we clearly cannot afford *not* to aim for such mass screening methods. If we divide the total expenses of a large screening program by the number of positive smears we find that it costs approximately $250 to discover each case of genital cancer. When one considers the enormous cost of the care and treatment of the cancer patient, which often reaches many thousands of dollars, as well as the socio-economic burden to the patient and family, it seems obvious that the means must be sought to extend mass screening to all women.

Another limiting factor is the lack of trained personnel, both at the technician and supervisory levels. It is estimated that there are about 1300 trained cytologists or cytotechnicians currently screening smears from about 5,000,000 women annually. The addition of 1100 more screeners would increase the annual capacity in our existing laboratories to about 11,000,000 examinations per year. More screeners and more laboratories equipped to examine "Pap" smears are urgently needed, if we are to reach the goal that is in sight.

Should the added cost to the patient of a cytologic examination be a deterrent? Most physicians are sensitive to the high cost of medical care and conscientiously try to minimize such costs. Would such a physician hesitate to biopsy a suspicious cervical lesion to save added expense to the patient? The cost of a vaginal smear is comparable to other routine laboratory examinations, such as a complete blood count.

Smear Gives Earliest Detection

The Papanicolaou smear does not replace the biopsy, nor should it be done other than by direct speculum examination. The smear, however, will show malignant cervical or endometrial cells before any sign, or symptom or visual evidence on speculum examination is present. This is the value of the "Pap" smear. It is able to detect exfoliated malignant cells from the normal-appearing cervix, as well as from the endometrium. It is able to detect malignant disease at a stage when it is almost 100 per cent curable. If all women were examined annually, each year an even larger number would be detected in the curable stage. Ferguson[3] at the University of Miami Medical School, in a study covering five years, reports the rather incredible finding of suspicious or positive smears in 77 women under twenty years of age. Of these 11 proved to have intra-epithelial carcinoma and there was no follow up in 25, so statistically there may be five additional cases if it were possible to obtain biopsies.

Examination of 5097 Women

For the past three and one half years we have maintained a small cytology laboratory at Tulane University School of Medicine. There has been no attempt at mass screening due to limitation of personnel. Therefore, the figures that we will present are distorted when compared with figures from mass screening programs involving well populations. However, they present some interesting material, and indicate where improvements in diagnosis could be made.

Since the opening of our laboratory we have examined vaginal smears from 5097 women, most of whom were patients at Charity hospital in New Orleans. Although we are not presenting a racial breakdown of this figure, the ratio of colored to white women admission to Charity Hospital approaches three to one during a ten year period from 1948-57. In this group of women we have had 119 positive smears, 113 of which were confirmed by biopsy and conization and 53

smears that were classified as suspicious or doubtful (Papanicolaou Class 3). Of these Class 3 smears 12 were positive on biopsy and conization. Therefore a total of 125 cases of malignant disease were discovered. 119 positive smears in 5097 women represents a positive smear rate of 2.3 per cent. Table 1 [4] shows the results of three population screening projects, where one can readily see the value of the technique in detecting unsuspected

TABLE 1.
THREE POPULATION SCREENING PROJECTS

	Women	Ca. in Situ	Invasive Ca.
Memphis			
1956	108000	3.6/1000	3.4/1000
Floyd County			
1957	17761	3.9/1000	1.6/1000
San Diego			
1954	137000	4/1000	.6/1000

P. L. Martin [4]

lesions. Our very high figure does not represent results in a "well" population.

Among these 119 positive smears we diagnosed 93 epidermoid carcinomas, the malignant cells being identified as of the squamous type. Table 2 shows the results of further investigation in this group. Biopsy or cold knife cervical conization revealed invasive cervical epidermoid carcinoma in 61 patients. Intra-epithelial carcinoma was found in ten. A mucinous adenocarcinoma of the cervix was also present. There were two cases of carcinoma of the vagina, one of which was located as a lesion in the rugae of the vagina only after a meticulous search. There was one carcinoma and one intraepithelial carcinoma of the vulva. No follow up was obtained in ten women, and there were six false positive smears, a figure representing 0.12 per cent of the 5097 women. It should be pointed out that in female genital carcinoma, treatment must not be instituted on evidence provided by the vaginal smear alone. Tissue confirmation should always be obtained. However, the accuracy of the method is such that an exhaustive search by biopsy, cold knife conization, and dilatation and curettage should be instituted in the face of a positive "Pap" smear.

TABLE 2.
119 POSITIVE SMEARS
SMEARS DIAGNOSED AS SQUAMOUS—93

Biopsy or cone diagnosis:	
Invasive Ep. Ca.	61
Intraepith. carcinoma	10
Mucinous adenoca. of cervix	1
Carcinoma of vagina	2
Ep. Ca. of vulva	2
Intraepith. ca. of vulva	1
Mixed Mullerian malig. tumor	1
	77
False Positives	6 (.12%)
No Follow-up	10

Seventeen of our 119 positive smears were interpreted as having exfoliated from adenocarcinoma (Table 3). Of these 16 were proven by biopsy or dilatation and currettage and there was no follow up on one patient. Of the sixteen, 11 primary adenocarcinomas of the endometrium and one recurrent carcinoma of the endometrium in the vaginal vault were found. There were two adenocarcinomas of the cervix. Two ovarian papillary serous cystadenocarcinomas, one of which had metastasized to the vagina gave positive vaginal smears. While uncommon, cells from ovarian carcinoma are found in the vaginal pool, presumably having migrated through the Fallopian tubes.

TABLE 3.
119 POSITIVE SMEARS
SMEARS DIAGNOSED AS ADENOCARCINOMA—17

Biopsy or D. and C.:	
Adenoca. of Endo.	11
Papillary adenoca. of ovary	2
Mucinous adenoca. of cervix	1
Adenoca. recur. vag. vault	1
Papillary adenoca. of cervix	1
	16
No Follow-up	1
	17

In nine smears, malignant cells were found, but it was not possible to determine the parent cell type. These are classified as undifferentiated malignant cells, and are most commonly found in poorly differentiated carcinoma or sarcoma. However, a large proportion of the exfoliated malignant cells from any tumor cannot be classified as to cell type.

Table 4 shows that biopsy or dilatation and curettage confirmed five as being positive, three being epidermoid carcinoma and two being adenocarcinoma. There has been no follow up in four patients.

TABLE 4.
119 POSITIVE SMEARS
SMEARS DIAGNOSED POSITIVE UNDIF.—9

Biopsy:	
Epidermoid carcinoma	3
Adenocarcinoma	2
	5
No Follow-up	4
	9

Procedure Following Doubtful Smears

Doubtful, or Papanicolaou Class III smears, of which we had 53 in our series, place the same responsibility on the clinician as the positive smear. As can be seen in Table 5, in 12, or nearly 25 per cent of smears that were classified as doubtful, carcinoma was subsequently

TABLE 5.
SMEARS DIAGNOSED AS DOUBTFUL—53
(PAP. CLASS III)

Biopsy, and Follow-up:	
Negative	30
Positive	12
	42
No Follow-up	11
	53

found on further investigation. A repeat smear and a meticulous examination is the first course of action in the presence of doubtful smears. This should be followed by cervical biopsy, cold knife conization, and dilatation and curettage if the repeat smear is still classified as doubtful or as positive.

Table 6 shows the follow up findings in 12 of our *doubtful or "Pap" Class III* smears. There were five intraepithelial carcinomas and one invasive epidermoid carcinoma of the cervix. Two endometrial carcinomas, one of which was non-invasive, were found. One intraepithelial carcinoma of the vulva complicated by a papillary adenocarcinoma of the Fallopian tube showed "Pap" Class

TABLE 6.
PAP. CLASS III
SMEARS WITH POSITIVE FOLLOW-UP—12

Intraepith. ca. of cervix	5
Ep. Ca. of cervix	2
Adenoca. of endo.	1
Intraepith. ca. of endo.	1
Intraepith. ca. vulva, ca. tube	1
Adenoca. of appendix	1
Ep. ca. in bowel, abd. wall, bladder	1
	12

III findings on a repeat smear. Finally, a patient with adenocarcinoma of the vermiform appendix, and one with epidermoid carcinoma involving the small bowel, the abdominal wall, and the urinary bladder, both showed markedly atypical cells in the vaginal pool. It can be postulated that malignant cells free in the peritoneal cavity could move through the tube and be found in the vaginal pool as occasionally occurs in ovarian carcinoma. In this case of carcinoma of the appendix, the lesion extended through the muscularis and peritoneum, and the proximity to the right Fallopian tube seems to make this a possibility. Of course, cells from the urinary bladder can easily find their way to the vagina.

Discussion

What are some of the lessons to be learned from this small series? First, the percentage of pre-invasive lesions is disappointingly small, but most of our smears were made on patients who had some disorder sufficient to warrant admission to the gynecological wards of Charity Hospital.

When mass screening is done, the percentage of intra-epithelial carcinoma should increase to over 60 per cent positive smears in a relatively short time, and ultimately should approach 100 per cent. Next, we see in Table 7 that 15 of our patients were under thirty years of age, and one of these was 18 years old. The Miami report emphasizes that screening should start in young women. It is our feeling that the "Pap" smear should become routine in the prenatal workup, and that any woman over 20 or who has had a child should have a cytologic exami-

TABLE 7.

125 PATIENTS WITH MALIGNANT DISEASE

	Colored	White
Under 20	1	0
21 - 30	8	6
31 - 40	18	6
41 - 50	14	9
51 - 60	17	6
61 - 70	21	4
71 - 80	9	4
81 - 90		1
Total	88	36 = 124*

* No information concerning age or race on one patient.

nation, at least once a year. Finally, the accuracy of the method is such that it can be depended upon to diagnose premalignant lesions of the cervix, and intraepithelial carcinoma of the cervix before any abnormality can be detected on direct speculum examination. In these instances the "Pap" smear can be described as a form of prophylaxis against cancer.

It has not been within the scope of this paper to discuss the numerous other applications of exfoliative cytology. Its accuracy and therefore its usefulness has been greatest in female genital cancer. However, improvements in technique are constantly increasing the diagnostic value of cytology in the fields of pulmonary disease, gastroenterology, and urology. Exfoliative cytology may be said to have had an eighteen year infancy and childhood, and is just now "coming of age".

The authors wish to acknowledge the efforts and cooperation of Mrs. Eva Mikes, cytotechnician at Tulane University School of Medicine.

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Politician at the Bedside

We trust the Congress has gumption enough not to approve some of the ideas of the coonskin crowned Senator about drug patents. To do so would only sound the death knell of pharmaceutical research. The Senator's ideas about lack of competition are not factual; he simply doesn't know what he is talking about. . . . His plan to make a Federal bureau the judge of efficacy is nonsensical. The clinician at the bedside is the one to determine efficacy. The politically climbing Senator would lodge too much autocratic power in a Washington bureau which might become dictatorial.—Editorial in **The West Virginia Medical Journal**, Oct. 1961.

The Management of Carotid Body Tumors*
A Review of Seven Cases

• A report of seven cases, carotid body tumor with a clear discussion of the essential clinical features, diagnosis and treatment.

BILLY G. TAYLOR, M. D.
New Orleans

CAROTID body tumors are rare. The true rarity of these tumors is brought out by the fact that only seven of these tumors could be located in the records of eight general hospitals and one specialty hospital in New Orleans, Louisiana. It is the purpose of this paper to review the current literature on the management of these tumors and to report the findings on seven cases available for review.

Because these tumors are usually intimately attached to the carotid blood supply to the brain and because no one surgeon in his lifetime will see many of these cases and because of the uncertain pathology of these tumors this review of seven cases may help one to make a proper diagnosis preoperatively and may help one to arrive at a proper treatment decision.

Reigner is credited with first excising a carotid body tumor in 1891.[1] The first tumor excised in America was by Schudder in 1903.[2] Since this time over 330 cases have been reported in the literature and numerous bilateral tumors have been recorded with an estimated bilateral incidence at three per cent.[3] There is a strong familial tendency to these tumors in several reports in the literature.[4]

Anatomy

The average diameter of a normal carotid body is 3.5 mm. with extremes of 8.0 to 0.5 mm.[5] In the human the carotid body cannot be found in more than 25 per cent of autopsy specimens and atrophy and fibrosis are commonly observed in elderly patients.

Function

Schmidt and Comroe [6] have extensively studied the function of the carotid body in the dog and have concluded that their major function is to respond to changes in the oxygen tension of the blood due to the presence of chemoreceptors. Hydrogen ions probably play an important part in the regulation of their chemoreceptor activity. The particular affinity of the cells of the carotid body for chromium salts caused many early investigators to feel that these cells elaborated epinephrine but this has been disproved.

Pathology

Carotid body tumors are the only pathologic lesions of the carotid body. The largest recorded tumor in the literature weighed 190 grams.[7] The lesions have been variously reported as paragangliomas, neuroblastomas, hamartomas, peritheliomas, and adenoma but the term "carotid body tumor" is to be preferred. These tumors grossly usually appear as reddish-brown in color, may be lobulated and usually are well encapsulated if the tumor is benign. Short vessels may extend from the carotid arteries directly into the mass which causes profuse bleeding upon an attempt at removal. LeCompte [8] divided the carotid body tumors into three groups microscopically. The *first* group is the most common and shows microscopically a repetition of the normal structure of the normal carotid. The *second* group is characterized by a cellular arrangement in which chief cells have an epithelial appearance. These cells are grouped in sheets or rows and are round or polyhedral with minimal stroma. The *third* group presents an "angioma-like"

* From the Department of Surgery, Louisiana State University School of Medicine, New Orleans, Louisiana.

pattern with spindle-shaped or cresentic cells compressed and in close association with many capillaries. All of the above groups are occasionally seen in the same tumor but usually one pattern predominates.

Most of the carotid body tumors are benign but frank malignancy does occur and it is due to this chance of malignant change that persistent attempts are made to remove these masses. Direct invasion of surrounding structures and spread to lymph nodes are frequently recorded in the literature and Phelps [9] found that local recurrence after inadequate removal was present in seven per cent of collected cases. Monroe [10] estimated local recurrence or metastasis in twelve per cent of patients. Harrington, Claggett, and Dockerty [11] from the Mayo Clinic stated that 50 per cent of the tumors in their series showed definite evidence of malignant change. Most authors disagree with this high incidence of malignancy. Very rarely are well documented cases recorded with widespread distant metastasis and when they are found one is struck with the slowness of the growth pattern. Donald and Crile [12] reported one tumor with a 25 year history from the time of resection to death with lung and bone metastasis, and Morfit [13] reported one case with a nine year history from time of diagnosis to death with bone and lung metastasis. Other reports are in the literature but they are few in number.

Diagnosis

Carotid body tumors are generally slow growing unilateral tumors. They are typically firm masses felt deep to the sternocleidomastoid muscle found at the bifurcation level of the common carotid artery. They are attached to the carotid at the notch, therefore, they can be moved in the horizontal but not in the vertical direction in the neck. These tumors occasionally exhibit a bruit and they may be compressible. The majority of the tumors occur in the adult between the ages of 40 to 60 but the youngest patient reported in the literature was age seven and one case reported in this present series was 85 at the time of operation. Differential diagnosis includes branchiogenic cysts, carotid aneurysm, metastatic disease in lymph nodes in the neck (particularly from lesions of the pyriform sinus), tuberculous adenitis, lymphoma, neurofibromas, and abscess formation in the neck. Of all of the above mentioned diagnoses under differential diagnosis the most single important examination is a careful intra-oral visualization and palpation to rule out primary carcinoma of the oral cavity with metastatic deposits of tumor in the neck.

Treatment

Most authors are in agreement as to surgery being the proper treatment for these tumors but no one is in complete agreement as to what should be done at the time of surgery. Many surgeons due to the extreme adherence of these tumors to the carotid have categorically advised against operating upon these tumors after a benign tumor diagnosis has been made by a pathologist. Lahey [14] has emphasized that he believes that these tumors should not be removed if they completely surround the internal, external, and common carotid arteries unless they have been proved to be malignant by biopsy or unless they have enlarged to such an extent that they impinge upon the pharynx obstructing the airway. Such caution is warranted due to the operative mortality of 4 per cent [15] to 65 per cent [9] which is reported when it becomes necessary to ligate the internal or common carotid artery which can easily occur after an unsuccessful attempt at removal of these tumors. It is certainly important before operation to establish a correct diagnosis in order to explain to the patient and to his family the risks involved at surgery. It has been shown that the Matas test (intermittent compression of the carotid artery on the side of the lesion in an attempt to stimulate collateral blood flow and to predict survival after carotid ligation) is not always a reliable procedure in predicting the outcome of carotid ligation. Quite frequently if the tumor is be-

nign on biopsy it will be found that by painstaking dissection a "white line" can be found along the carotid vessel where the tumor is attached and by dissecting in this line and perhaps dissecting a portion of the adventitia of the carotid the tumor can be dissected free from the vessel. Excision of the carotid and carotid body tumor and a prosthetic graft have been reported,[16] but this does not appear to be warranted if the lesion is benign. It has been suggested that these patients should be operated upon under hypothermia in order to reduce the incidence of cerebral damage if it became necessary to ligate the carotids at time of surgery.[17] It has been further suggested [18] that the divided distal ends of the internal carotid and external carotid arteries should be anastomosed if it became necessary to resect the carotid bifurcation at the time of surgery. It has been shown that it is quite important that the patient should be kept flat in bed postoperatively if it became necessary to ligate the internal or common carotid artery. The use of anticoagulant therapy in the immediate postoperative period to avoid internal carotid thrombosis has been suggested but this use must be weighed against the possibility of a major hemorrhage from its use in the immediate postoperative period.

Radiation Therapy Questionable

Rarely has radiation therapy been shown to be of benefit in the treatment of these tumors and it would appear that if the diagnosis was benign the giving of x-ray to the neck would further complicate ultimate resection of the mass if one was again forced into operating upon the patient. For grossly non-resectable tumor due to malignant disease there would certainly be no argument against irradiation but most authors have shown that these tumors are in main radio-resistant.

Case Reports

Case 1.—A 65 year old white female was admitted to a hospital on 10/3/57 with a chief complaint of a painless swelling beneath the right mandible and beneath the right ear. This lump had been present for three years with a gradual increase in size and there had never been any pain associated with this mass. Past history and family history were non-contributory. Physical examination revealed a firm, non-tender, movable mass beneath the angle of the right mandible without other findings in either neck. Intra-oral examination and the remainder of the physical examination was normal. A pre-operative diagnosis of probable benign lymph node was made. On 10/3/57 this mass was exposed through an incision in the upper cervical region and a smooth yellow tumor was found to be encircling the carotid bifurcation. This lesion was removed by sharp dissection without incident and the wound was closed in layers. The pathology report was benign carotid body tumor and the patient had an uneventful postoperative course. She was discharged from the hospital on 10/5/57 and has been well since.

Case 2.—A 46 year old white female was admitted to a hospital on 6/25/61 with a chief complaint of a painless swelling in the right neck of one year's duration. This lump was tender to palpation but there was no other complaint referable to the mass. Past history revealed that the patient had had a hysterectomy and family history revealed that both of the patient's parents had died of heart disease. Physical examination was within normal limits with the exception of a 3 x 3 cm. solid but questionably cystic mass located at the bifurcation level of the carotid artery on the right. There was in addition to this a 2 x 2.5 cm. cystic nodule in the upper pole of the right thyroid lobe. On 6/26/61 under general anesthesia the patient first had a curettement of the nasopharynx and frozen section of this material was reported as benign. After this report had been obtained an incision was made in the right upper neck and a 3 x 3 cm. mass was located surrounding the bifurcation level of the carotid artery. By sharp dissection this lesion was removed and a small blood vessel from the external carotid artery was divided during the dissection and this defect was closed with 5-0 arterial silk and the remainder of the wound was closed in layers. The pathology report was benign carotid body tumor and the patient was discharged from the hospital on 7/2/61 with no postoperative neurological sequelae and she has been well since.

Case 3.—A 55 year old white female was admitted to a hospital on 2/18/57 with a history of having a mass in the right neck removed at another hospital on 8/1/47. Her physician was contacted and he stated that at this previous operation a benign carotid body tumor was removed and the common carotid artery was ligated just below the bifurcation level at the time of removal of this mass. At the time of the surgery ten years before she had had no cerebral complications following surgery. At the present hospital admission the patient gave a history of hav-

ing vague intermittent hoarseness and had tickling sensations in the back of her throat for one year and she stated that a lump in her left neck had been present for one year. Physical examination revealed a well healed scar in the right neck without evidence of a recurrent tumor and there was a 2 x 2 cm. smooth, freely movable mass in the left neck at the carotid bifurcation level. This mass was movable in the transverse plane but not in the vertical plane. The remainder of the physical examination and a mirror examination of the larynx was normal. A clinical diagnosis of carotid body tumor was made, but since the patient had had her right common carotid artery ligated after excision of one carotid body tumor it was felt that the patient should be observed closely and that surgery was not warranted unless the mass increased in size. She had been followed closely since this time and there have been no symptoms referable to this mass and the swelling had not increased in size when she was last seen in September of 1961.

Case 4.—A 37 year old white female was admitted to a hospital on 10/3/60 with a history of having infectious mononucleosis diagnosed 13 years before with enlargement of "all of the neck glands" at the time of this infection. After this infection subsided the patient first felt a mass in her right neck which gradually increased in size. There was no pain associated with this growth. A thorough ear, nose and throat examination had been done prior to the patient's admission to the hospital and this was normal. Physical examination was within normal limits with an exception of a 1 x 3 cm. smooth but firm mass present in the right digastric area near the carotid bifurcation. This mass was compressible and transmitted arterial pulsation. On 10/4/60 the right neck was entered through a transverse incision directly over the mass and with the sternocleidomastoid muscle retracted the common carotid artery was found to enter the lower pole of the tumor. Tapes were applied around the external, internal, and common carotid artery and the tumor was shelled away by sharp dissection. During this dissection a small nick was made into the lumen of the common carotid artery and it was necessary to occlude the common, external, and internal carotid arteries with the tapes for an estimated 15-20 minutes while the hole was closed with arterial silk. Postoperatively the patient had a central left seventh nerve paralysis and a partial paralysis of the left index finger extensor in addition to a right ninth and right twelfth nerve palsy. The patient was discharged from the hospital on 10/14/60 and she has since regained function of the left seventh nerve and right ninth and twelfth nerves. She was last seen in August 1961 and has a residual paralysis of the left index finger extensor. The pathology report of the mass removed was a well encapsulated benign carotid body tumor of a pinkish red color.

Case 5.—A 60 year old colored female was admitted to a hospital on 2/2/54 with a progressive swelling of the right side of the neck since September 1953. Physical examination limited to the head and neck revealed a soft rubbery, ill-defined five cm. mass located beneath the right ear which was described as barely movable but not fixed to the skin. There was a definite bruit over the mass and this was thought to be a carotid aneurysm. On 2/11/54 a carotid arteriogram was done and a large amount of dye was seen overlying the upper two cervical vertebrae and a mass was seen displacing the internal and external carotid arteries anteriorly. After the arteriogram was obtained a presumptive diagnosis of carotid body tumor was made and on 3/9/54 an incision was made over the mass extending from beneath the ear to the midline. A purple-pink mass was found at the level of the carotid bifurcation lying above the vessels and one-half of the mass was beneath the mandible. The sternocleidomastoid muscle was divided and Penrose drains were used as tapes around the common carotid artery and the external carotid artery was ligated. By sharp dissection this five cm. mass, which was wedged between the carotid artery bifurcation and the vertebrae, was removed without incident. The pathology report was benign carotid body tumor and the patient had a smooth postoperative course and she was discharged from the hospital on 3/25/61. Since this time she has had hoarseness and she has been found to have a right vocal cord paralysis. Since surgery she has had no evidence of recurrence in the neck but she has been followed in the medicine clinic for hypertensive arteriosclerotic heart disease and has been treated with digitoxin, reserpine, and Diuril®. She has also been followed in the psychiatry clinic for findings mainly due to senility. She was last examined in August 1961.

Case 6.—An 85 year old white male was admitted to a hospital on 7/5/57 with a history of having a pea-sized mass in the right neck which rapidly increased in size for the three to four weeks period prior to hospital admission. Past history was non-contributory. Physical examination revealed a blood pressure of 185/88 and the only other positive physical finding was a 6 x 4 cm. throbbing tumor located in the right upper neck which was barely movable but was not fixed to the skin. Chest x-ray and cervical spine x-ray were normal other than arthritic changes noted in the spine. On 7/26/57 under general anesthesia a long incision was made over the mass in the direction of the sternocleidomastoid muscle fibers and the common carotid artery was identified and a tape was placed around this structure. The tumor was yellow-brown in color and was wrapped around the common carotid artery. An attempt to excise all of the tissue was made but this was not possible without sacrificing the carotid vessels and a frozen section of tissue removed was reported as "epithelial carcinoma".

In view of the fact that it would be necessary to ligate the carotid arteries to remove the mass it was elected to close the patient's wound and give him postoperative x-ray therapy. He was discharged from the hospital on 8/12/57 but he did not return until 12/10/57 when he was again admitted to the hospital with a history of repeated hemorrhages from the right neck wound for two weeks. A 10 x 6 x 5 cm. pulsatile mass was described in the initial physical examination with redness of the skin and fixation of the mass. On 12/11/57 the patient had a profuse bleeding episode from the right neck and under local anesthesia the common carotid artery was ligated in an attempt to control the hemorrhage. The blood pressure was 210/100 at the time of the ligation. There were no cerebral abnormalities after this ligation. On 12/12/57 the patient again had profuse bleeding from the right neck wound and after 4000 cc. of whole blood had been given the wound was opened and as much of the mass as possible was removed including the internal carotid, external carotid, and common carotid arteries in the specimen. The tumor was found to be invading the mandible and the base of the skull at the time of surgery and it was impossible to remove all of the tumor. During this procedure the patient had a pulse but no blood pressure for a ten minute period of time. Post surgery the patient had a stable blood pressure of 140/100 but he had a left hemiplegia which persisted at the time of his discharge from the hospital on 12/31/57. The final pathology report was malignant carotid body tumor. No further follow up on this patient could be obtained on this patient after discharge to his home town.

Case 7.—A 57 year old colored female was admitted to a hospital on 1/22/58 with a history of a slowly growing left neck mass which she first noted three years before. One month prior to admission she first began to notice pain in her left ear. Past history revealed that in 1953 the patient had been admitted to a hospital for aphasia and a mild CVA was diagnosed. The patient recovered without residual symptoms. Positive physical findings on this admission included a blood pressure of 160/100 and a 5 x 7 cm. firm oval mass was described at the angle of the left mandible which appeared fixed to the deep structures but it was not fixed to the skin. There was in addition to this mass a 1 x 1 cm. shotty movable lymph node palpable just anterior to the tumor. Skull x-ray and chest x-ray were normal but the electrocardiogram was suggestive of myocardial disease. On 1/30/58 a transverse incision was made over the swelling and a hard, rubbery tumor was noted at the level of the carotid bifurcation through which the common carotid artery, external carotid, internal carotid artery and jugular vein passed. An attempt was made to remove this mass from the involved arteries by sharp dissection but this was impossible therefore all of the carotid arteries and jugular vein were removed with the specimen. The patient was not in shock at any time during the surgery and her blood pressure remained stable in the recovery room. She was found to have a left hemiplegia upon awakening and she would respond slightly to questions but she never fully regained consciousness. She progressively became less and less responsive after her second day post surgery and she expired on 2/13/58. The final pathology report was malignant carotid body tumor with one section of lymph node containing tumor. Autopsy was refused.

Discussion

By consulting Table 1 it will be noticed that of the cases reviewed only once was a case correctly diagnosed prior to surgery and this case had an arteriogram done to rule out a carotid aneurysm before the correct diagnosis was entertained. On this arteriogram a narrowing of the carotid was noted at the region of the bifurcation of the carotid artery and then the diagnosis was first suspected. Aspiration biopsy according to the method of Hayes Martin might have been of distinct benefit in obtaining diagnosis of carotid body tumor preoperatively. MacComb [19] was able to obtain a diagnosis in three out of ten patients using this method and he had no complications from this procedure. A correct preoperative diagnosis would be of distinct benefit to allow one to be able to explain the risk of surgery to the patient and in order to allow one to have an arterial prosthesis available on a moment's notice if surgery was persisted in and if carotid artery damage occurred during surgery.

It is shown in Table 1 that of the seven cases presented the tumor was benign in five cases and was malignant in two cases. Of the two cases of malignant carotid body tumor there would have been no place to insert a prosthetic graft after excision of the tumor and this appears to be the usual finding from the reported cases in the literature. The morbidity and mortality following ligation of the carotid arteries is shown in Table 2. One patient with a benign carotid body tumor after excision wound up with the common carotid artery tied but she luckily sur-

TABLE 1.
SUMMARY FINDINGS IN SEVEN CASES OF CAROTID BODY TUMOR

I. Incidence:	
A. Number of patients	7
1. Male	1
2. Female	6
B. Average age of patients	58 yrs.
1. Youngest	37 yrs.
2. Oldest	85 yrs.
C. Race	
1. White	5
2. Negro	2
II. Location of Tumor:	
A. Right side	6
B. Left side	1
C. Bilateral (2nd side clinical Dx)	1
III. Symptoms:	
A. Average Duration	3 yrs.
1. Over one year	5
2. Less than one year	2
B. Lump in neck	7
C. Pain	1
D. Hoarseness	1
IV. Diagnosis:	
A. Correct pre-operative	1
B. Missed pre-operative	6
V. Pathology:	
A. Benign tumor	5
B. Malignant tumor	2

vived. Two cases with malignant tumor who had carotid arteries tied had hemiplegia resulting in each instance and death occurred from one of the ligations. It has been shown by Moore and Baker [20] that the mortality after ligation of the carotid arteries was 30.6 per cent if the patient was in shock at the time of ligation and was 11.4 per cent if the patient was not in shock at the time of ligation. Of the two malignant cases who had their carotid arteries tied in the series presented, one of these patients was in shock at the time of ligation but she survived with a hemiplegia. The other case was not in shock at any time of the operation but she did not survive ligation of the carotid.

It is to be further noted that of the two cases of malignant carotid body tumor reported here that both of these patients had a history of a lump in their neck with a rapid increase in size over a short interval of time. One of the cases had a lump present for three years before this rapid increase occurred and one cannot help but wonder if there was a change from a benign carotid body tumor to a malignant one with this history.

TABLE 2.
SUMMARY OF TREATMENT AND FOLLOW UP OF SEVEN CASES OF CAROTID BODY TUMOR

I. Treatment:	
A. Radiation	0
B. Surgery	7
1. Carotid injury at surgery	5
a/Tear and repair	2
1. Cerebral complications	1
2. No complications	1
2. Carotid ligation	3
1. No complications	1
2. Hemiplegia	1
3. Hemiplegia and death	1
II. End Results:	
A. Living	5
B. Lost to follow up	1
C. Post-operative death (14 per cent)	1

Summary

1. Carotid body tumors are rare. Only seven cases could be found for review in nine New Orleans hospitals.

2. Due to the rarity of carotid body tumors the diagnosis is seldom made preoperatively but the gross characteristics of a smooth rubbery yellow to purple colored mass located at or surrounding the carotid bifurcation should be diagnostic at the time of surgery. All but one of the benign cases of this series had a history of a slow growing mass in the neck for over one year. A sudden increase in size of a mass in the neck should make one suspicious of malignant disease.

3. A thorough examination to rule out oral disease should be done prior to surgery on the neck. An aspiration needle biopsy of the mass pre-operatively may be of some benefit in either ruling out other disease or may make the diagnosis prior to surgery. A carotid arteriogram may be of diagnostic help.

4. When a diagnosis of benign carotid body tumor has been made by the pathologist, the dangers of excision of the tumor should be carefully weighed against the dangers of leaving the tumor in situ. The risk of having to ligate the common or internal carotid artery after an attempt at excision of a carotid body tumor is a serious problem accompanied by a high mor-

tality and accompanied by serious cerebral complications. If the diagnosis is malignant carotid body tumor an attempt at removal is justified, but removal of all of the tumor may be impossible.

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The Dangerous Sweep of Social Changes

There is no need to regulate the pharmaceutical industry economically if the system of free enterprise is to prevail as our way of life. If the manufacturing industry is weakened by economic regulation or repeated harassments, the attacks will ultimately spread to the professions of retail pharmacy and the practice of medicine, and to other industries. Once we swing toward socializing the manufacturing drug industry through a process of regulations, the sweep of social change may well engulf the entire health field. —Francis C. Brown, President, Schering Corporation, to the New Jersey Pharmaceutical Association.

Medical Management of Duodenal Ulcer*

• The author presents an extended discussion of the factors involved in the treatment of duodenal ulcer. Due consideration is given to psychological, dietary and medicinal aspects of care. Stress is placed on the need for proper evaluation and for suitable provision for the ulcer patient as an individual.

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PEPTIC ulcer has been widely accepted as a reference or descriptive term indicative of all forms of benign gastroduodenal ulcers. Until recent years gastric ulcer and duodenal ulcer have been considered identical except for anatomic distinctions and potentiality of neoplastic association with gastric ulcer. The two lesions are, however, appreciably different in etiology, pathogenesis, course, and prognosis. Whereas the management of patient and disease advocated herein for duodenal ulcer is in part applicable to a benign gastric lesion, it is not suggested that the two lesions should be handled in identical fashion.

The cause of duodenal ulcer remains obscure; yet all etiologic theories include the importance of secretion of hydrochloric acid. Available knowledge of the gastric secretory mechanism permits a practical and physiologic therapeutic approach, discounting the currently prevalent concept that the end result of the medical management of ulcer is merely the natural eventuation of the disease. Discovery of the exact mechanism of production of ulcer will probably establish more sound and effective protection in relation to alterations in mucosal resistance. In the meantime, we should be guided by existing knowledge in controlling hypersecretion by meticulous therapy, which experience has shown can and does alter the course of the disease.

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Nine Schools of Therapeutic Principle

I shall attempt to present a logical approach to the medical management of duodenal ulcer, to resolve the existing confusion, to expose emphatically the casualness endorsed in some teachings. There exist at least nine schools of therapeutic principle, each reflecting the enthusiasm and philosophy of one or more agressive preceptors and their disciples:

1. *"Nihilists"* totally reject the influence of any formal therapy in deterring an ulcer from its natural course.

2. *"Liberalists"* emphasize the lack of objective evidence of benefit of diet and antacid therapy and strive to free the patient from exacting regimens.

3. *"Psychogenesists"* accredit benefit accrued from dietary and pharmacologic programs to subtle psychogenic influence.

4. *"Somatologists"* contend that an ulcer is an organic manifestation and stress the necessity for correlating it with a faulty mechanical factor.

5. *"Empiricists"* strive to correct presumed deficiencies by replacement with serum of animal tissue and urine of ulcer patients and hormones.

6. *"Dolorists"* confine their objective to relief of pain going even as far as interruption of neural pathways, hypnosis, electronarcosis, injection of procaine, or infiltration of the pneumogastric nerve.

7. *"Credulists"* are willing to try anything new introduced for ulcer therapy. Available for their use but with little or no benefit to the patient are such products as the detergents, chlorophyll, cabbage juice, chymotrypsin, sweet almonds, soy

bean derivatives, enzyme substrates, and the like. If they find parenteral therapy more dramatic, they may replace the old-fashioned histadines with convalescent serum from ulcer patients or human gamma globulin.

8. "*Conformists*" advocate the principles introduced by Abercrombie and endorced by the "ulcerists" Cruveilhier, Lenhartz, and Sippy.

9. "*Scientists*" interpret from the physiologic reactions encountered in laboratory animals the behavior of humans without the benefit of clinical application or experience.

10. We favor a conservative group that may be classified as "*individualists,*" whose resourcefulness is desirable for all therapists. These clinicians carefully evaluate the patient, the background, and course of ulcer and the associated or resultant disturbed anatomy, nutrition, physiology, psyche, and related or unrelated diseases. From such investigative analysis, it should be possible to design a therapeutic regimen which clinical experience dictates applicable and which may be further modified to the social, economic, and occupational status of the patient.

This analytical plan should continue to survive the trial of time and new remedies of many decades, and permit the melding of pharmacologic, dietetic, psychotherapeutic, and surgical approach to abnormal secretion and motility. Only an occasional gastroenterologically oriented physician or surgeon will stray from these sound principles into realms of empiricism.

Objectives of Ulcer Management

Only this type of constructive clinical reasoning permits establishing the following desired objectives of ulcer management.

1. Assurance of satisfactory quiescence by management sustained adequately to permit healing of the segment that cannot be put at complete rest. An ulcer of many years' duration, with scarring and penetration, cannot completely granulate in and epithelize over in a period of a few weeks or months, if at all.

2. Prophylaxis against reactivation by adequate initial therapy and interval intensive management, as indicated, when greater liability exists in relation to stress, infection, exposure to ulcerogenic drugs, and seasonal factors.

3. Retreatment of reactivations as meticulously as of the initial illness, since reactivations are more prone to complication.

4. Recognition, intelligent interpretation, and proper medical or surgical management of complications to prevent chronic debilitation.

5. Avoidance of personality intractability of patient or physician, in which the insight of either may permit the disease with or without complication to eventuate in emotional or physical disability or both.

6. Establishment of benignancy in lesion at junctional areas.

Rational Clinical Approach

The experienced clinician, whose scope of patients contact is beyond that of a consultant, adopts this mode of achieving these objectives. Justifiably controversial issues and indications for deviations toward liberalism or rigidity will always persist. The patient should, however, be protected against the overly credulous, the unduly enthusiastic, and the thoroughly uncritical physician who readily accepts and endorses empirical nostrums. As long as the cause remains obscure, ulcer therapy cannot be definitive; this fact alone, however, does not necessarily thwart the achievement of our objectives, nor should it distract us from a continuing search for more efficient therapeutic adjuncts. Instead, our approach, because of limitation, should become the more meticulous. Thorough diagnostic appraisal is the primary therapeutic requisite. This involves classification of degree of acuteness or chronicity and assay of potentiality of complication.

Significance of associated or concomitant diseases must be evaluated to reassure the patient and create confidence in the physician. A stable status is best sus-

tained by sincere, well directed management by a single physician, who can analyze the interplay of psyche and soma and can design therefrom dual therapeusis applicable to the person as well as to the lesion. Thus, treatment becomes tailored to the patient's temperament, environment, and potentiality. Lastly, basic therapeutic principles should be followed, and by such measures both patient and physician become aware that exacting management at present constitutes the best assurance for ulcer control, if not cure.

Indoctrination of Patient

Normalcy as applicable to the ulcer patient necessarily encompasses:

1. Living within physical and emotional capacity. The necessity for tolerated regularity of living habits (eating, sleeping, relaxation, entertainment, exercises, and occupation) is established. Environmental tolerance or alteration is a component of tranquility.

2. Abstinence from such obvious mucosal irritants as alcoholic beverages, nicotinic acid, chloroquine, caffein-containing materials, cinchophen, and salicylates.

3. Discontinuance or moderations in smoking (a controversial issue), since it may be harmful.

4. Avoidance of ulcerogenic therapeutic agents, or restriction to those sanctioned and justifiably indicated by severity of associated illness.

5. Prevention of significant cutaneous exposure to the sun.

Special Instruction

Such concomitant diseases as arthritis and tuberculosis demand measures in conflict with ulcer management. Specific direction is dictated by the diabetic's dietary program and insulin requirement. Diseases that contribute to ulcerogenic potentiality, such as pancreatic secretory disturbances, hepatic cirrhosis, the post-shunt status, hyperparathyroidism, and pulmonary emphysema necessitate more detailed directives.

Diatetics

Many physicians consider dietary ulcer regimens a tradition and not a source of therapeutic accomplishment. Most physicians concede that:

1. The precepts of Sippy are impractical, unduly onerous, and unnecessary other than for the acute phase of ulcer disease.

2. Nutritional acid control is frustrating for dilution, neutralization by amphoteric proteins and possibly inhibition by hormone influence through concentrated fats have an antacid potential difficult to evaluate.

3. All foods are gastric secretory stimulants by chemical, mechanical, neurogenic, or humoral mechanism. The least stimulating (carbohydrate and fats) have the lowest neutralizing action. The most effective antacid foods (proteins) are the most stimulating to the parietal cells.

4. Control long-term studies suggest a lack of dietary influence on the natural course of an ulcer. Short-term studies have not substantiated appreciable influence on rate of healing.

5. The etiologic concept of abnormal protein metabolism or of nutritional deficiency lacks verification.

Dietary Pattern

However, clinical experience and logic, not tradition, dictate dietary pattern:

1. The patient who experiences persistence of intensification of ulcer manifestations on a liberal diet justifiably condemns such continued therapy.

2. The consistent indictment of certain foods by the patient is not ill conceived.

3. Reproduction of ulcer manifestations by specific foods can be substantiated.

4. The inflamed, hypermotile, partially obstructed duodenum (and stomach) in the nauseous individual does not qualitatively or quantitatively tolerate bulky and irritating foods.

5. The patient's idiosyncrasies, actual or assumed, should not be discounted without dietary evaluation.

6. The patient may be theoretically ca-

pable of eating a liberal diet, but rarely psychologically or physiologically can this be substantiated by attempts at immediate full feedings during the acute phases of the disease.

7. Most patients who are referred to gastroenterologists for ulcer management represent previous therapeutic failure resulting from poor management and causal dietary indoctrination.

8. Most statistical studies supporting liberalism in diet emanate from areas where there is little or no individual responsibility on the part of the physician for the patient's total care.

Plan of Dietary Procedure

Reasonable dietary compromises may be made, as dictated by the acuteness, severity, and responsiveness of the disease. Standardization is logically established for the patient with acute, severe, but uncomplicated ulcer, an "unknown" in terms of potential. On the basis of response, as measured by symptomatic relief, clearing of occult blood in stools, and roentgenographic improvement can be achieved over a "quiescent period" of eight weeks or a program can be outlined. Thereafter, extremes of conservatism desirable for obstructive phenomena, penetration, bleeding, and of greater liberalism for the readily responsive, mild, superficial, acute erosive ulceration are acceptable.

The initial standard program modifies the Sippy dietary regimen only in quality. It includes hourly feedings of milk or a suitable blended substitute, supplemented by six small bland feedings varied from soft to blended.

Indwelling intragastric reference electrodes placed in intact human stomachs have recorded the fluctuations of pH in response to interval feedings, interval antacids, and various combinations of food in different consistencies with and without inhibition of gastric motility by anticholinergics. Preliminary observations suggest that a six interval feeding, low protein, blended food program, supported by interval administration of antacids and anticholinergics, can maintain a pH between 4.0 and 5.0 throughout a sixteen hour period. After 48 hours, when acute manifestations have subsided, if the patient can properly masticate food well cooked, not blended or pureed, products of the same category are added at the same six intervals. A bland, three-meal-a-day program with supplemental mid-meal feedings is initiated when sustained symptomatic relief approaches the tenth day and is thereafter continued indefinitely as a "normal" program for the individual with an "abnormal" gastroduodenal segment.

Precise written instruction is more effective than casual description. The physician or a capably instructed dietitian must be prepared to answer all questions and to make reasonable adjustments to conform to the desires and the economic, religious, social, physical status of the patient. Constructive restrictions must be exacted for such associated situations as diabetes, cirrhosis, and shunt patient, illness which requires sodium restriction, gout, hypercholesterolemia and obesity.

Obvious Dietary Measures

In all instances certain obvious dietary measures may be used to advantage:

1. Any dietary deficiency may be corrected or prevented by adequate nutritional and vitamin content.

2. Small frequent feedings lessen the gastric work load while maintaining an acid neutralizing content.

3. Mechanical irritation may be avoided by restriction to smooth soft, or blended foods.

4. Avoidance of the irritation of thermal extremes is desirable.

5. Chemically irritating, excessively sweet, acid, salty, or spicy foods should be avoided.

6. Dietary components of proteins, fat, and carbohydrate should be combined, in such a way as to avoid any extremes of acid stimulation and to achieve delay in gastric emptying.

Unnecessary dietary restriction may increase the patient's preoccupation with

somatic difficulties. Moderation or normalization of dietary habits is more effective.

Anticholinergics are Important Adjuncts

The gastric hypersecretion of patients with duodenal ulcer is directly attributable to a vagal hyperactivity, which additionally influences other phases of secretion (antral, adrenal or cephalic-humoral). Anticholinergics, when properly administered, are, therefore, effective in modifying the vagal factor so as to reduce acid secretion, curtail gastric emptying due to hypermotility, and relieve localized pyloroduodenal spasm. These objectives are achieved by tailoring the optimum effective dose of the selected agent to the patient in terms of quality, duration of action, and mode of administration, and thus achieving an approximation to a "medical vagotomy." There is uniform improvement with parenteral administration but results are less predictable with oral dosage. Again, careful medical evaluation and guidance are the indices to accomplishing the objective. Statistics drawn from standardized controlled clinical trials should not be interpreted as failures to achieve beneficial results.

When properly used, most of the presently available anticholinergics are effective only as adjuncts. Their entire action is undesirable in the presence of esophagospasm, pyloric obstruction, hemorrhage, and suspected or actual penetration. Admittedly, neither their secretory nor motor influence is always predictable. They can, however, be consistently effective under most circumstances against basal secretion when their administration is governed by knowledge of dosage, duration of action, site of maximum influence, and "physiologic availability." The physician should be thoroughly familiar with the agents of his selection and should learn to use one or a few properly rather than to search for the "ideal" drug on the basis of recommended dosage. In experimental clinical evaluation, we investigated a new agent over a twelve-month control period against other commercially available agents of established efficacy and can thus compare our known controls, such as Pro-banthine®, a short action agent, and Daricon®, a sustained action product, against the drug under evaluation. At present, we are investigating Robanul™,* an intermediary acting anticholinergic. This new agent is used in substitution periods in some ulcer patients and in alternate new patients. Dosage is established for each patient on the basis of tolerance and duration of side effects; effectiveness is then confirmed by secretory measurement and roentgenographic evidence of influence on motility. Robanul™, with an average optimum effective dose of 2 mg. and a duration of action of six to eight hours, has proved to be an effective anticholinergic and an efficient adjunct agent in management of ulcer. This was evident in a twelve-month period of observation in the primary management of 30 ulcer patients and in comparative study as a substitute for Pro-banthine® and Daricon® in 30 ulcer patients under previous anticholinergic therapy. The usual contraindications and side effects were encountered; three patients were excluded during the study because of intolerance to these side effects.

In the past and present studies, I have been impressed with the adjunctive, specific value of properly administered anticholinergics in suppressing gastric secretion and in delaying gastric emptying in ulcer patients and advocate their use in all uncomplicated cases unless contraindicated by glaucoma, prostatic hypertrophy, or idiosyncracies. I favor the newer, inherently long-acting agents, Daricon® and Robanul™, which, on the basis of recent experience, simplify control by less frequent administration.

Sedatives

Anxiety and restlessness are impressive components of the ulcer patient's personality. The history, with occurrence and recurrence of ulcer, is often insep-

* Robanul™ (AHR-504) was supplied by A. H. Robins Company, Richmond, Virginia.

arably linked to emotionally and physically stressful situations. The nervous origin of hypersecretion of the patient with duodenal ulcer is impressively documented in vagotomy studies and in studies of patients under stressful situations. Obviously, therefore, sedatives are requisite adjuncts in bringing the patient through a crisis and supporting him thereafter. The amount and duration of administration are questions of clinical judgment. We know from experience the value of the barbiturates; they continue to be acceptable as safe, consistent aids to achieving cooperation by reducing tension and enhancing tolerance to emotional trauma. We prefer minimum dosage as assurance against dependency and depression.

Limitation of these drugs has sponsored the wide use of tranquilizing agents. The contention that these agents do not afford "any distinct advantage over appropriate doses of the barbiturates either as a hypnotic, as a daytime sedative for the relief of neurotic anxiety and tension" does not conform with our experience. That they have become advantageous substitutes for the barbiturates is substantiated by time, double-blind, and comparative evaluation. In double-blind study, Librium® proved consistently more effective than phenobarbital or placebo. In comparative single-blind (patient) study, Kevadon®, a thalidomide, proved more satisfactory than barbiturate or placebo.

A different psychological approach is available through use of amitreptyline hydrochloride (Elavil®), which pharmacologically has atropine-like, antihistimine, and antiserotonin actions which resolve into a "relaxation" influence. In preliminary comparative evaluation, we have confirmed adjunctive value in the management of 20 patients with duodenal ulcer in whom a depressive emotional component has predominated.

Anesthetic Agents

Anesthetic agents, such as Oxaine®, are efficient in controlling the pain and discomfort of esophagitis, antral gastritis, and possibly the antral phase of gastric secretory stimulation and thereby may be applicable to the management of these concomitants to duodenal ulcer. Although not primarily an antispasmodic, this agent has proved to be a valuable substitute in patients in whom anticholinergics are contraindicated.

Antacids

Acid gastric secretion is essential to formation of duodenal ulcer, the neutralization of which brings relief of pain and the control of which probably assures healing. This alone establishes the therapeutic position of the antacids.

We do not know the extent of diminution in gastric acid required for healing of the ulcer. Therapeutic efforts are directed usually toward neutralization of the continuous gastric acid secretion to a pH of at least 4.0 to 5.0. Symptomatic relief demands only a deviation to normacidity; there is reason to question the necessity of creating an abnormal state to achieve ulcer control.

In vitro evaluation indicates that the acid neutralizing adequacy of the recommended dose of antacid exceeds the anticipated 24-hour hypersecretion of the patient with duodenal ulcer. Studies of efficacy *in vivo* suggest that the rapidity of gastric emptying often limits antacid expectancy to approximately 40 minutes, regardless of the agent's potency, mode or duration of action. Obviously, therefore, an adequate dose at hourly or more frequent intervals is required unless adjunctives are administered simultaneously to influence gastric secretion and motility.

Since most ethical antacids in recommended dosage (liquid, powder, or tablet) are adequate *in vitro* neutralizers in the intragastric period, selection should be influenced primarily by side effects, which may be significant (sodium content, alkalosis, no absorptive interference, hypercalcemia, constipation, diarrhea); by palatability and convenience, since patient cooperation is important; and by cost, since long-term administration is required. Dosage, frequency and necessity for nocturnal administration are individ-

ual problems and should be judged accordingly.

Miscellaneous Measures

Gastric radiation to suppress secretion of acid has been favorably sponsored. We have limited this measure to cases refractory to the usual medical measures and under this restriction we have been unable to confirm any favorable results.

Gastric aspiration therapeutically is limited to obstructive complication. It is, however, also a therapeutic guide indicative of the significance of obstruction and the severity of hypersecretory states. Continuous intragastric alkali or milk drips are too arduous and unrewarding for endorsement. A satisfactory method to increase mucosal resistance in ulcer patients has not yet been achieved.

Conclusion

A combination of patient evaluation, dietary direction, acid secretory neutralization and suppression, and applicable sedation comprises our therapeutic regimen at present. This composit, with each component tailored to the individual requirements, has in a ten year follow-up of 200 patients permitted us to support the following statements statistically: [1]

Prognosis in the medical management of duodenal ulcers, utilizing rest (sedatives), diet, antacids, and an anticholinergic, is more favorable than in many organic diseases. Thus, 47 per cent of our patients have remained asymptomatic; in 39.5 per cent the ulcer has remained uncomplicated despite the fact that it represented a recurrence; complications that required surgical treatment have developed in 9.5 per cent and complications that have responded to medical management have developed in 4 per cent.

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The Real Transgression

The sin in the orbit of the Kefauver hearings and his proposed new legislation lies **not** in the cost of drugs to the public; **not** in the accepted successful methods and sound traditional practices of pharmacy and medicine; nor is it in the economic system under which an American health team operates and serves the public. The real transgression is the tampering and meddling of certain misguided politicians with a progressing, dynamic plan of health care that is serving our American people so bountifully and so well. And I have the horrible suspicion that this tampering and meddling arises not as much from a sincere-at-heart design for the good of the people as it does from the motives of political expediency and selfish advantage.—Nelson M. Gampfer, Chairman of the Board, The Wm. S. Merrill Company, to the Kentucky Pharmaceutical Association.

The Differential Diagnosis of Exophthalmos*

• Monocular exophthalmos may be due to a variety of inflammatory and neoplastic causes. Differentiation of these conditions requires consistent study of the anatomy and knowledge of the pathology.

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THE establishment of an etiologic diagnosis in cases of monocular exophthalmos continues to pose one of the most perplexing and often frustrating problems confronting the ophthalmologist. Short of actual surgical exploration and biopsy, a large number of diagnostic procedures are at our disposal. Even with such new techniques as planography, ultrasonic and radioactive phosphorus uptake studies, often only an educated guess and a presumptive diagnosis can be made.

Defining Exophthalmos

Exophthalmos is present when an eye is displaced anteriorly more than three mm., and unilateral exophthalmos is present when there is more than three millimeters difference between the coronal position of the two corneal apices. Several conditions producing the appearance of a prominent eye must be considered in determining whether true exophthalmos exists. Pseudoexophthalmos occurs with high degrees of myopia, developmental bony deformities of the orbit, such as gargoylism, hyperteliorism and early thyrotoxic states in which there is hyperactivity of the smooth muscle of the lids and orbit. Members of the negro race are also prone to have prominent eyes, due to the laxity of the lid tissues and orbital septum.

Unique Anatomy of the Orbit

Certain anatomic features of the orbit render it unique from the standpoint of pathology genesis and course. The orbit is devoid of a lymphatic drainage channel, thus being deprived of an important disposal system for intraorbital fluid and exudative material. Secondly, the veins of the orbit have no valves, in comparison with veins of comparable size elsewhere in the body. Metastatic and embolic phenomena are thus free to progress efferently or afferently, forward from the cavernous sinus, or posteriorly from a lid, lip, nose or paranasal sinus infection or tumor. Lastly, the orbit is a fairly well sealed cavity, with the orbital septum serving as an elastic lid. Pathologic processes in the orbit, by virtue of their space taking properties, stretch the septum and displace the globe anteriorly. Lateral and vertical displacement are determined by the nature and position of the lesion.

Lesions are Inflammatory or Neoplastic

Basically, space occupying lesions of the orbit can only be inflammatory or neoplastic. Either process may be primary or secondary. The most common inflammatory condition arising in the orbit, which is presumed to be primary, is the pseudotumor or chronic granuloma. The importance of clinically differentiating between pseudotumor and true tumor has been well demonstrated by the fact that in a series of thirty exenterations performed for malignancy, half were found to harbor only chronic granulomatous tissue. Surgical intervention in the presence of pseudotumor is only indicated when sight is in jeopardy as the result of corneal exposure, or optic nerve involvement. The clinical features of pseudotumor are such, however, that a strong presumptive diagnosis can often safely be made, and the need for useless radical and mutilating surgery be eliminated. Transitory prodromal edema of the lids and conjunctiva fre-

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quently herald the onset of pseudotumor several weeks before the development of exophthalmos. Pseudotumor is a disease of adulthood, having an average onset age of forty-five years. The exophthalmos is usually abrupt in onset, axial, and rapidly progressive, in contrast to that produced by neoplasm, which is more gradual in onset, and often displaces the globe out of its axial plane. Diplopia due to ocular immobility, and pain are common presenting symptoms. A palpable mass is present in about 50 per cent of cases. X-ray changes are characteristically absent. The course is self limited, regression being the rule, although the fellow orbit becomes involved in about 30 per cent of cases four to nine months after onset of the disease.

Inflammatory Processes

Acute inflammatory processes involving the orbit are usually secondary to sepsis in a neighboring structure such as the lids, face, nose or paranasal sinuses. The routes of entry are by the blood stream or direct extension. Usually blood borne, pyogenic organisms give rise to a thrombophlebitis, orbital cellulitis, and eventually orbital abscess when the process becomes localized. The history of a purulent infection near the orbit, rapid onset of exophthalmos with concurrent cardinal signs of inflammation, pain, immobilization of the eye, and systemic manifestations of sepsis and toxicity form a well defined picture of acute orbital cellulitis. The offending organism is usually either streptococcus viridans or staphylococcus aureus.

A peculiar and special form of streptococcal orbital cellulitis occurs in new born infants, resulting from gingival erosion in the region of the first molar tooth bud. The process erodes the floor of the orbit by way of tissue that is to become the maxillary sinus and quickly develops into an orbital abscess. Cavernous sinus thrombosis, meningitis and "exodus lethalis" were the course of events in presulfonamide and antibiotic days. This pathologic complex still carries a high morbidity and mortality. The patient age, presence of gingival involvement, X-ray evidence of a tooth bud in the orbit, and the other findings of acute orbital inflammation establish the diagnosis and explain its genesis.

Primary Orbital Tumors

Primary orbital tumors are, for the most part, a disease of youth and young adulthood. They are almost always unilateral. The exophthalmos develops gradually, and pain is not usually experienced. X-ray changes of the orbital bone are frequently found. These changes consist of evidence of increased intraorbital pressure such as dehiscenses, erosion with surrounding hyperostosis of bone and outward bowing of the bony walls.

Obviously, since all three embryonic germinal layers are represented in the orbital contents, the numerical possibility of tumors of different cell type is almost infinite. Reese and his co-workers recognize eight basic orbital tumor groups, one of which is the pseudotumor or chronic granuloma. The other seven basic tumors are: dermoids, lymphomatous disease, gliomata, meningiomata, angiomata, peripheral nerve and lacrimal gland tumors.

Dermoids

Three types of dermoids occur in the orbit. All are congenital in development, but may not become manifest until the third decade of life. The three forms are the dermoid tumor, dermoid cyst and the teratoma. The tumor is usually found arising on the eye itself, adjacent to the limbus, and well localized anteriorly. The dermoid cyst is most often found in the upper outer quadrant of the orbit, presenting as a palpable mass, and extending back to the orbital apex. Teratomata are characterized histologically by the presence of bone, cartilage and skin appendages such as glandular structures, hair follicles, even nerve endings. The dermoid group is only locally malignant.

Angiomata

The angiomata represent the most common primary orbital tumor. These occur most of the time in youth and young

adulthood. The exophthalmos is usually very slowly progressive, and according to Reese, a palpable mass is present in about 50 per cent of the cases. The mass when present, is soft and compressable, and the exophthalmos is often reductable. Five histologic types of angiomata occur. These are cavernous, capillary, angioblastic and racemose, hemangiomata and the lymphangioma. Upon auscultation, a bruit is rarely heard, but when present, has to be differentiated from an arteriovenous aneurysm. The exophthalmos due to a ruptured aneurysm is of very abrupt onset, and is often associated with some sort of trauma, such as a whip-lash injury.

Gliomata

Gliomata of the optic nerve usually makes their appearance early in life, and are characterized by early sight loss. The exophthalmos is axial, since the tumor arises in the extraocular muscle cone or at its apex, and is very slowly progressive. No pain is usually experienced, and no mass is usually palpable. Enlargement of the optic foramen is a fairly common X-ray finding when the tumor has extended back of the orbit through the canal into the intracranial cavity. The two histologic types of optic nerve glioma are the oligodendroglioma and the astrocytoma. Both are relatively benign with regard to life, but do destroy sight and can invade the calvarium.

Meningiomata

The apical periosteum of the orbit can be regarded as an extension of the intracranial dura, and the optic nerve sheath an extension of the arachnoid sheath. These structures then are the sites of origin of orbital meningiomata. Occurring near the apex of the orbit, and expanding anteriorly, meningiomata produce a slowly progressive exophthalmos. Unless pressure is applied to the optic nerve, visual loss is not a prominent finding. Diplopia and prominence of the involved eye are most frequently the presenting symptoms. A palpable mass is rare, but when present is quite firm in consistency. Pain is rarely experienced. X-ray changes of the overlying bone are fairly characteristic. They consist of bone thinning, with surrounding hyperostosis. The prognosis is usually good.

Lymphomata

Lymphomatous disease of the orbit includes the benign lymphoma, reticulum cell lymphosarcoma, giant follicle lymphosarcoma, lymphocytic leukemia and Hodgkins disease. The exophthalmos produced by this group of lesions is usually fairly rapidly progressive, although the rate does depend upon the cell type of the neoplasm. Pain and visual loss are usually late findings and are complications of the exophthalmos, or the result of invasion into contiguous structures. The X-ray findings consist of bone erosion, dehiscenses and outward bowing. The prognosis is determined by the histologic cell type and the association with generalized disease. The lymphomatous diseases are generally radiosensitive, and if the lesion is confined to the orbit, the prognosis is good.

Neuromata

Tumors of the peripheral nerves include the neurilemona, neurofibroma, malignant schwannoma and amputation neuroma. In the orbit, these usually arise from branches of the third nerve and produce a slowly progressive skewed exophthalmos. Diplopia and exophthalmos are usually the presenting symptoms. These tumors are often associated with generalized disease or tumors elsewhere in the body, as in the case of von Recklinghausen's disease. A firm, palpable mass is present about 40 per cent of the time. Peripheral nerve tumors tend to be locally malignant, and the x-ray changes produced are the result of pressure upon neighboring bone.

Mixed Tumor

Mixed tumors of the lacrimal gland occur in adulthood, having an average onset age of 40-50 years. Although a palpable mass is usually present, the most common presenting symptom is exophthalmos. Two histologic types of lacrimal gland tumor are recognized. One type, the true mixed tumor, is well encapsulated and consists

of epithelium forming cords and alveoli, often containing mucous in a central lumen. The myxomatous stroma contains cartilage and bone, and separates the epithelial elements. The second form of lacrimal gland tumor is the adenoid cystic type, or the cylindroma. This tumor does not have the myxomatous component, and is made up of cords and sheets of epithelial cells. Unlike the true form, the cylindroma is not encapsulated, is relatively malignant, and tends to invade bone.

Rare Primary Tumors

A number of rare primary tumors arise in the orbit, but, because of their low incidence, not enough is known about their clinical features to form any general conclusions as to specific diagnostic pictures. Listed among these are chondrosarcoma, rhabdomyosarcoma, medulloblastoma, and the fibroblastoma. It may be said, however, that these rare tumors are usually highly malignant, and the prognosis is poor, even when an early diagnosis is made.

Secondary Tumors

Secondary tumors of the orbit fall into three categories: Tumors arising within the eye itself, tumors arising in adjacent structures such as the lids, nose, lacrimal sac, nasopharynx and paranasal sinuses, and lastly, tumors which have metastasized from remote sites.

The two most common intraocular tumors which invade the orbit are the retinoblastoma and the various forms of malignant melanoma. The retinoblastoma is a disease of infancy and early childhood while the melanomas occur most frequently in adulthood. Both tumors can produce exophthalmos after the orbit has been invaded. The diagnosis is made on the basis of the ophthalmoscopic picture, and is usually made before extraocular extension has occurred. The prognosis becomes grave when either of these tumors leave the globe.

Basal cell and squamous cell epitheliomata of the lids and nose invade the orbit, and can produce exophthalmos. The diagnosis is usually easily made because of visual access to the primary lesion. The rapidity of invasion into the orbit with consequent exophthalmos is determined by the histologic cell type. Caldewell's and Water's roentgenographic views of the orbit and sinuses are of great value in assessing the role played by neighboring structures in the production of exophthalmos. The prognosis is poor when carcinomatous lesions of the sinuses extend into the orbit. Mucocoeles of the sinuses, however, carry a good prognosis, and the diagnosis is usually based upon roentgenographic findings.

The most common metastatic neoplasm found in the orbit is the sympathicoblastoma or neuroblastoma. This is usually a tumor of childhood and arises in the adrenal medulla or along the sympathetic chain. Neuroblastoma in the right adrenal metastasizes to the liver, and is referred to as the "Pepper" type. The Hutchinson type of neuroblastoma arises in the left adrenal and metastasizes to the orbit presumably by way of Batson's paravertebral veins. Unilateral, rapidly progressive exophthalmos in a child under five years of age should suggest the presence of neuroblastoma, in the absence of an intraocular tumor.

The most common primary site of carcinoma metastasizing to the orbit, is the breast. Other primary sites are the uterus, cervix, kidney, thyroid gland, prostate gland and pancreas. Malignant melanomata of the skin, especially of the thigh, have been reported to spread to the orbit and produce exophthalmos.

Conclusion

In conclusion, the success or failure in accurately establishing the cause of unilateral exophthalmos is determined by the thoroughness of the team investigating the patient. The team should consist of the ophthalmologist, radiologist, neurologist, neurosurgeon, internist, surgeon, otolaryngologist, pathologist, and in young patients, the pediatrician. The probability of the exophthalmic patient having sys-

temic pathology is high, and every possible approach should be taken in the diagnostic survey.

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Antibiotic Certification Unnecessary

At present, the Food and Drug Administration certifies five antibiotics and insulin. These costly precautions were first applied to penicillin during World War II. . . . Even though these antibiotics have now been produced in pure crystalline form for years by firms of proven competence, the F.D.A. has stopped certifying only one form of one antibiotic. . . . As a result, reliable manufacturers with years of experience are still being forced to add to their costs by paying fees to support this certification program. During fiscal 1959, this covered only six drugs but it cost more than 1.2 million dollars. That same year, the F.D.A. used less than 9 million dollars for all its other enforcement activities.—Elmer B. Vliet, Chairman of the Board, Abbott Laboratories, to American Society of Oral Surgeons.

Drug Incompatibilities in Anesthesia*

• A discussion of the effects, dangers, contraindications and precautions to be taken when the use of modern drugs which affect the nervous system, precedes the administration of anesthesia.

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THE introduction of certain modern therapeutic drugs has produced problems incident to their use when patients receiving these preparations must undergo surgery. Administration in relation to anesthesia and surgery may be associated with circulatory, respiratory and neurological difficulties not usually encountered in unanesthetized patients. When the medical history reveals that an individual scheduled for anesthesia has been or is being treated with these compounds, caution must be observed to avoid unexpected complications and morbidity.

Tranquilizers

The onslaught of the tranquilizers (Table 1.) brought new investigational problems to anesthesia.

TABLE 1.
MAJOR TRANQUILIZERS

1. Rauwolfia Derivatives
   (Serpasil, Reserpine)
2. Carbamate Derivatives
   (Equanil, Miltown)
3. Phenothiazine Derivatives
   Chlorpromazine (Thorazine)
   Promazine (Sparine)
   Perphenazine (Trilafon)
   Trifluoperazine (Stelazine)
   Trifluropromazine (Vesprin)
   Prochlorperazine (Compazine)
   Mepazine (Pacatal)
   Promethazine (Phenergan)
4. Diphenylmethane Derivatives
   Hydroxyzine (Vistaril, Atarax)

Rauwolfia is a mild ataractic, effective only after several daily administrations. The drug tends to deplete the body stores of epinephrine and norepinephrine. Hypotension in the anesthetized patient on Rauwolfia therapy is not uncommon.[4]

The dicarbamates are very mild tranquilizers. The ataractic activity of these compounds is usually not great enough to allay preoperative apprehension. Occasionally depression rather than tranquility accompanies their use.

The phenothiazines constitute the largest group, and have a common chemical nucleus—the phenothiazine ring

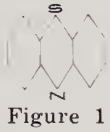


Figure 1

They prolong post-anesthetic waking times and act in an additive manner to the depressant action of the barbiturates, opiates and general anesthetics.[3] In the presence of the phenothiazines, dosages for barbiturates and narcotics should therefore be reduced. Hypotension during anesthesia is often seen with chlorpromazine and to a lesser extent with the other phenothiazines. This adrenolytic-type hypotension can be disturbing and refractory to treatment, sometimes requiring a continuous vasopressor neosynephrine-levophed) drip.[5] Promethazine is probably the most useful of this group because of its anti-histaminic and anti-emetic properties and low incidence of hypotension during anesthesia.

The diphenylmethanes are tranquilizer-antihistamines that have gained popularity because of their ability to reduce apprehension and emesis. The hydroxyzines do not appear to disturb blood pressure.[1]

Misuse and incomplete knowledge of some of the tranquilizers has led to a not completely justifiable condemnation of the entire series. The generally increased incidence of complications in relation to

* Presented before the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, New Orleans.

anesthesia makes it advisable, however, to discontinue the administration of any unsatisfactory or incompletely studied tranquilizer at least seventy-two hours preoperatively.

Anti-Hypertensive Drugs

The widespread use of chemotherapy in treatment of hypertension has given rise to groups of drugs which can potentiate hypotension during anesthesia. Drugs which reduce peripheral resistance comprise the largest group (Table 2) and can be deleterious. Chlorthiazide (Diuril) tends to produce electrolyte imbalance, particularly hypokalemia.

Anesthesia for patients receiving anti-hypertensive therapy should be administered with extreme vigilance, and physiological vasopressors, (e.g. phenylephrine, norepinephrine) should be immediately available. It is advisable that all therapeutic anti-hypertensive drugs be withdrawn at least seventy-two hours before contemplated surgery.

TABLE 2.
ACTION OF ANTI-HYPERTENSIVE DRUGS

1. Depression of autonomic centers in midbrain (Apresoline)
2. Depression of vasomotor center in medulla (Narcotics, Hypnotics, General Anesthetic agents)
3. Stimulation of vasodilator center in medulla (Veratrum Alkaloids)
4. Sympathetic ganglionic blockade (Methonium Compounds)
5. Blockade of post-ganglionic sympathetic nerve endings (Dibenamine, Priscol, Benodaine, Regitine, Phenothiazines)
6. Paralysis of effector cells of vessel walls (Nitrates, Nitrites, Certain Ergot Preparations)

ACTH, Cortisone

Adrenocorticotrophic hormone and corticosteroid therapy have been reported to depress adrenocortical function for as long as six months after discontinuance of treatment. Prolonged or intensive usage of ACTH produces a hyperfunctioning adrenal cortex, and sudden withdrawal of this stimulus produces a hypofunctioning cortex. Similar use of cortisone produces the same hypoactivity. Difficulty, which may occur at any time during the anesthetic procedure or postoperative period, is primarily manifested by cardiovascular collapse. Treatment at this time is intravenous replacement with hydrocortisone.

It is advisable that cortisone be reinstituted preoperatively to any patient who has received corticoid therapy within six months of contemplative surgery.[11] This may reach a daily peak of 400 mg. in the immediate postoperative period with gradual withdrawal over a period of one week.

Epinephrine and Derivatives

Epinephrine should not be used in the presence of cyclopropane, trichlorethylene and fluothane. Dangerous ventricular arrythmias are prone to occur. Ether, certain adrenergic-blockading agents, and phenothiazines are partially protective, but cannot be considered an absolute safety factor. If vasopressors must be used with the three mentioned anesthetics, derivatives of epinephrine which are capable of cardiac stimulation should not be employed. Methoxamine (Vasoxyl) and phenylephrine are satisfactory.

Oxytocics

Posterior pituitary extract (pituitrin), composed of pitocin and pitressin, produces widespread vasoconstriction including the coronary vessels. In the presence of cyclopropane, trichlorethylene and fluothane, this can lead to cardiovascular collapse. While pituitrin itself is now rarely used, its fraction, pitocin, is widely administered in obstetrics. It must be remembered that pitocin is a biological preparation and as such can possess a small percentage of vasopressin according to U.S.P. standards. While some complications during cyclopropane anesthesia have been attributed to pitocin, it is generally thought that it can be used safely in the presence of general anesthesia.[7] Synthetic pitocin (Syntocinon) is free of vasopressin.[9]

The oxytocics, particularly the alkaloids of ergot, potentiate the vasopressors as

used in spinal anesthesia for blood pressure maintenance. This combination can produce prolonged hypertension with its secondary effects. This problem has been partially solved with the use of a dilute continuous phenylephrine drip for maintenance of blood pressure until delivery is accomplished.

Antibiotics

Neomycin administered intraperitoneally is capable of potent neuromuscular blockade. Respiratory paralysis has resulted when intraperitoneal neomycin has been combined with the administration of ether, d-tubocurarine and other curare-like drugs. Streptomycin, dihydrostreptomycin sulfate, kanamycin and polymixin B. also possess curariform activity. For this reason these drugs should not be used intraperitoneally during general anesthesia. It has been suggested that catheters be placed intraperitoneally for post-anesthetic instillation of neomycin.[10]

Trichlorethylene

Trichlorethylene, mostly used in the United States for self-administered obstetrical analgesia, decomposes into toxic products when exposed to alkali and heat. In the presence of soda-lime, dichloracetylene is produced. This decomposition product has caused cranial nerve palsies and can further decompose into phosgene. Furthermore, it can linger within the soda-lime circuit for as long as three days.[2] Any patient receiving trichlorethylene should not be administered any anesthetic in the presence of soda-lime for at least several hours after trichlorethylene is discontinued.

Anticoagulants

While no actual direct incompatibility exists between anticoagulants and anesthetic agents, regional anesthetic technics are contraindicated.[6] Danger of hemorrhage secondary to needle trauma is real. Appropriate prophylactic measures must be taken to counteract the anticoagulants before regional anesthesia or diagnostic or therapeutic nerve block is undertaken.

Summary

Certain modern drugs may be therapeutic under usual conditions of administration and deleterious when altered conditions such as anesthesia supervene. As new chemotherapeutic agents are introduced, their possible incompatibility with anesthetic agents and techniques should be considered.

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Symptoms and Treatment Of Globus Hystericus

• A clinical discussion of the causes, symptomatology and treatment of globus hystericus using a drug as a psychotherapeutic agent.

JAMES E. PRUETT, M. D.*
HARRY J. ZOLLER, M. D.**
New Orleans

IT is not infrequent that a patient presents with a chief complaint of a lump in the throat or a related symptom in the general area of the pharynx. Globus hystericus is the diagnosis if the complaint is proven to be functional in origin.

It is often that this snap diagnosis enters the physician's mind and only a cursory examination follows. This is also true, as Rigby[1] points out, that physicians generally have a lack of interest for diseases in the upper end of the esophagus, pharynx, and larynx.

In the practice of medicine, there are certain complaints, headaches, and dizziness being examples, which can be diagnostic problems, and globus at times can certainly fit into this category.

Lockhart[2] mentions that the symptom complex known as globus hystericus is usually a result of some underlying emotional disturbance. However, it must be borne in mind that a large array of organic diseases may also produce a similar picture.

The purpose of this discussion is to briefly give a practical approach to the globus patient, and present a series of functional cases and their response to a psychotherapeutic agent.

Symptoms

The patient is typically a middle aged female who has not usually gone very long with her complaint, as she fears it is cancer. It is difficult for her to describe exactly the way her throat feels. The most common presenting symptoms are: A lump, knot, fullness, tightness, pressure, swelling, scratchiness or sensation of a foreign body in the throat. The most important features which distinguish globus hystericus from organic lesions is the usual absence of pain and true dysphagia, and the intermittent nature of the symptoms. There is no interference with swallowing food, but swallowing their own secretions may be troublesome.

The location commonly ranges from the base of the tongue to the substernal region, but most frequently centers at the level of the cricoid cartilage.

Method of Investigation

A thorough examination of the head and neck is carried out with particular attention to the pharynx. Mirror examination of the nasopharynx and larynx is included. The tongue is palpated for indurated areas, which would be suspicious of early carcinoma.

In most instances, a barium swallow during fluoroscopy should be done if the trouble persists for more than two weeks. An esophagoscopy is reserved as a final diagnostic procedure. It is sometimes needed to convince the patient of negative findings, and occasionally is therapeutic as it serves to dilate spastic areas such as the cricopharyngeus sphincter.

Organic Causes

Several authors[1, 3, 4, 6, 8] have listed numerous conditions which can initiate the globus symptom complex, but the follow-

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ing are probably the most frequently encountered:

1. Pharyngitis, lingual or faucial tonsilitis which can create areas of paresthesia leading to the symptoms.
2. Hyperplasia of lingual tonsils or of lymphoid tissue in the lateral pharyngeal wall.
3. Postnasal drip of all causes, particularly from sinus infections and nasopharyngeal allergy.
4. Hypertrophic lipping of the lower cervical spine, described by Rigby.[1]
5. Esophagitis, which is usually associated with spasm at the cricopharyngeus muscle or cardia.
6. Tumors, benign or malignant, cysts in the mouth, pharynx, esophagus, and larynx.
7. Miscellaneous causes such as: elongated styloid process, pharyngoesophageal diverticulum, enlargement of the thyroid gland, and "after sensation" of a foreign body in the throat such as from fish or chicken bones.

If after a careful search there is no obvious pathological cause, then one can assume a functional basis.

Management of Functional Cases

Explaining the cause of the functional nature of these distressing symptoms requires a serious and sympathetic approach. The patient should not be left with the idea that there is nothing wrong, but should be reassured that the condition is not serious.

Most patients will accept the suggestion that it is a type of nervous disorder. After this is mentioned, many will admit to some anxiety, the cause of which may be either known or unknown to them. The underlying problem may be difficult to uncover. Common sources as mentioned by Sinamark [7] are worry from any cause, sexual neuroses, and monotony or drugery.

Aldrich [6] emphasizes that the globus patient employs the mechanisms of rationalization and displacement. Using rationalization, he attributes his symptoms to disease which may occupy any portion of his body, in this instance the throat. Using displacement, he realizes he is emotionally disturbed, but thinks this is due to an existing disease, in this case, the globus.

Physiology

The physiology of this condition has never been definitely explained. There are several popular theories. Jacobson [5] felt it was sometimes due to a slight spasm of the esophageal musculature. Tremble [8] mentioned that in cases of nervous instability disordered spasms of the cricopharyngeus muscle may occur. Hilger [10] feels that disturbances in the autonomic nervous system create neurovascular changes in many locations. These may be evident in the hypopharynx as a sensation of a lump.

Method

In addition to reassurance, most authorities feel that some drug with a sedative or calming action is indicated to lessen the existing anxieties, and in turn help to control the distressing symptoms.

In twenty-six patients with globus hystericus, hydroxyzine pamoate * was employed for a period ranging from one to two weeks. The usual oral adult dosage was 50 mgm four times daily. This agent has been proven effective in the management of neuroses and emotional problems manifested by agitation, tension, anxiety or apprehension. Since primary skeletal muscle relaxation has been demonstrated with this drug,[11, 12, 13] it was felt that it would be particularly useful in globus.

Twenty-four of the twenty-six patients were females ranging in age from six to seventy-two with the majority being from twenty to fifty years of age.

After careful examination to rule out any organic causes, the diagnosis of globus hystericus was made. Esophagoscopy was done only after the symptoms did not subside with hydroxzine pamoate therapy.

Results

The results obtained were classified in the following groups: excellent, good, fair,

* Vistaril (Chas. Pfizer & Co., Inc.)

or poor depending on the degree of relief afforded. They are tabulated in Chart 1.

CHART I

Excellent	Good	Fair	Poor	Discon-tinued	Total No. of Patients
13	7	2	2	2	26

Side effects consisted of drowsiness, headaches, and weakness and occurred in six patients and the agent had to be discontinued in two; one due to severe frontal headache on the third day and one due to sweating, weakness, and fainting spells. This reaction to hydroxyzine pamoate can not be explained and unfortunately, the patients refused to try this medication again.

According to the above results, 80 per cent obtained significant relief and only a few of the patients require the medication now and then for recurrence of the symptoms. The authors were especially impressed by the absence of toxicity of any kind.

It is difficult to assess what part other factors play, such as the physicians' reassurance, but it is felt that hydroxyzine pamoate is a valuable adjunct to therapy in such a disturbed patient.

Summary

Globus hystericus as a symptom-complex, is discussed.

Treatment of the functional condition consists of reassurance and a search for the underlying cause of the anxiety.

The use of hydroxyzine pamoate, a psychotherapeutic agent, in twenty-six patients is evaluated and found to have value in the treatment of this condition.

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The ability and willingness of the drug industry to invest vast sums in research, in new methods of production, and in factories, as well as their proficiency in mass production and rapid distribution, have contributed greatly to medical knowledge and the service that we, the members of the medical profession, are able to give to the public. Their cooperation, along with the afore-mentioned facts, has produced, probably, the finest system of medical practice and care in the world.—Irving Rubin, M. D., in **Annals of the District of Columbia**, Oct. 1961.

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Editorial

The Use of the Legal Doctrine "RES IPSA LOQUITUR" In Medical Malpractice Suits

Among the many factors that have increased the burdens of the practicing physician in recent years is the medical malpractice suit. The growth of the conditions under which this suit may appear is having a profound effect upon the procedures of practice, the attitude of the physician and the expense to the patient. When legal action is taken against the physician it has been the general custom that the plaintiff, who is the patient making the complaint against the physician, furnish proof of the facts in the situation which are alleged to make the defendant, who is the physician in the case, liable for negligence. Because of the nature of things medical and because the lay public which in the legal action is the jury, does not have extensive knowledge in this field, it is necessary for proof to be furnished by experts who are physicians.

It has been difficult for the plaintiff's attorneys to secure expert testimony of physicians which would support the plaintiff's case. This difficulty is increasing. The reasons for the difficulty seem hard to understand only to those who are not practicing medicine. The alleged conspiracy of silence does not exist but physicians are frequently reluctant to testify.

One physician is going to hesitate to condemn another for conduct "which seems not too far from the customary practice of the witness himself". The physician knows that he does not have entire control of all of the factors that enter into any situation and that the same applies to his fellow physicians. Furthermore he knows that his mastery of even a small portion of a medical field is questionable but in the process of cross-examination he does not want to be made to appear inferior. Still further he knows that in the battle of intellects in court, he has little experience to guide him, while the opposing lawyer is in a field where he spends a major

portion of his life. The total effect of these various influences has made it difficult to get doctors to testify except as to fact.

There are certain groups of malpractice actions in which expert medical testimony is not necessary. Such cases apply to facts which are within the common knowledge and experience of laymen or which may be ascertained by the ordinary use of the senses of the nonexpert. Among such would be an action based upon an allegation of operation without consent or of autopsy performed without legal authorization.

Because of the difficulty in getting medical expert testimony, plaintiff's lawyers have sought an extension of the idea that the jury could be instructed by their common knowledge and experience and without the aid of expert medical opinion to determine whether the conduct of the physician toward the patient is violative of the physician's duty. It is at this point that the doctrine of "*res ipsa loquitur*" is brought in; the translation of which is "the thing speaks for itself" and is a doctrine of the general law of ngeligence. This makes the juror his own witness and his own expert. "It is held applicable whenever one person is injured by an instrumentality entirely in the control of another person, the use of which, if the person in control exercises due care, does not ordinarily result in injury. Formerly this doctrine had no application in malpractice cases." In some states it is still excluded. It seems as though there is a tendency for its scope to be extended.

One authority [1] states that in the large bulk of malpractice actions the doctrine fails because of the inability to establish one of the vital elements. One of these is that the event or the accident does not ordinarily occur in the absence of someone's negligence. The second is that the instrumentality causing the injury was within the exclusive control of the defendant or that the evidence makes it more probable than not that it was the defendant's conduct which caused the injury. The third is that the injury was not due to any voluntary action or contribution on the part of the plaintiff. It was stated by this authority that the first of the three components is the most difficult to prove; that is, that the injury would not occur in the absence of negligence. This is the point where the imponderables which are present in all disease and which are not within the range of measurement, have their effect.

The doctrine does not apply to a mistake in diagnosis, unsuccessful treatment or an adverse effect of medical procedures properly carried out. It does not apply to the choice of a wrong method of treatment or an adverse result of a medical procedure which is known to produce some bad results even when all precautions have been taken. On the other hand the courts have been willing to make use of the doctrine in many groups of cases such as foreign bodies, removal of the wrong part of the body, burns, failure to take x-rays, etc. In the application of the ruling, most courts treat the doctrine as giving rise to a permissible inference "so that the plaintiff is entitled to get to the jury and the jury is entitled but not required to conclude that negligence was present".

Acceptance of the doctrine in a given case by the court shifts the burden of proof from the plaintiff to the defendant. He then has to prove that he either was not negligent or that his conduct was not the cause of the injury.

It is stated in the article referred to that Louisiana courts have spoken in terms of a fourth requirement of *res ipsa loquitur*, that is, "the facts causing the injury were peculiarly within the knowledge of the defendant and not equally accessible to the plaintiff". This would make it apply particularly to unconscious patients. The eminent authority quoted also states "if the standard of care is the accepted practice of the medical profession itself, a requirement that the defendant establish compliance with that standard in cases which seem to the laymen to speak of neg-

[1] McCord, Allan H.: Louisiana Bar Journal, Vol. IX, No. 4, Page 257 (Feb., 1962).

ligence is appropriate. However, I believe that it is incumbent upon the trial judge to make clear to the jury that convincing evidence of such compliance,—will absolve the defendant of his liability". The same authority states that the lay evaluation of medical practice may appropriately occur in making the decision as to whether the burden of proof should be shifted and whether the defense evidence is convincing. It is stated that the trend seems to be toward an extension of the doctrine *res ipsa loquitur* in the malpractice field.

To quote another eminent authority,[2] "if with its continued extension the time is reached when a bad result of itself affords evidence, however slight, of negligence on the part of the attending physician, there will be few courageous enough to practice medicine." In other words the physician cannot be regarded as an insurer.

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[2] Regan, Louis J.: "Doctor and Patient and the Law, 3rd Ed., Mosby, Page 214.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.



C. J. BROWN, M. D.
President
1961 - 1962

Dr. Cuthbert J. Brown, our President for the past year, has served you efficiently and well. He has, in all his deliberations, had the best interest of the Society and its members at heart. He has been extremely active and thoroughly conscientious in filling the position of President and his actions and decisions were all made with the best interest of the Society and its members uppermost in his mind. Dr. Brown has attended many national and local medical meetings during his term of office and, at all times, has upheld the free enterprize practice of medicine and has voiced his feelings against socialized medicine in any form and especially against the King-Anderson legislation now pending in Washington.

Dr. Brown was born in New Orleans in 1903 and received his academic education in the New Orleans elementary schools, graduating from Warren Easton High School in 1921 and received his B.S. degree from Tulane University in 1925 and his M.D. degree in 1927. He served his internship at the Charity Hospital of Louisiana at New Orleans in 1927-1928.

After serving his internship he was appointed visiting surgeon on the staff of the Charity Hospital. Soon after his graduation from the medical department of Tulane University, he was appointed Senior Visiting Surgeon on the Hotel Dieu Surgical Staff, serving in this capacity up to the present time.

Dr. Brown is a member of many national and local medical organizations, including the Inter-

national College of Surgeons, the American College of Surgeons, the American Medical Association, the Southern Medical Association and the Surgical Association of Louisiana. He served as President of the Orleans Parish Medical Society in 1950.

Dr. Brown has served on many important committees of the Louisiana State Medical Society and as chairman of some of its most important committees, including Public Policy and Legislation, the Congressional Committee and the Council.

Dr. Brown served as AMA Key Legislative Consultant for Louisiana for three years just prior to his election as President of the State Society for 1961-62.

In addition to Dr. Brown's activity in the medical field, he has been quite active in civic organizations, being a member of the Chamber of Commerce, Metairie Country Club and several carnival organizations.

He is also a member of the American Society of Abdominal Surgeons, New Orleans Graduate Medical Assembly and has served as President of the Board of Practical Nurse Examiners since 1950.

Dr. Brown married Miss Wilma Ellender on November 8, 1932 and this union has been blessed with three children, Kathleen Ann, now attending the University of London, Susanne Mary now a student of Marymount College, Tarrytown, New York and Cuthbert, Jr. now a sixth grader at Ecole Classique in New Orleans.

We are all confident that our Society has been in good hands and we congratulate Dr. Brown for the splendid way in which he has served our Society as its President for the past year.

THE MD'S RESPONSIBILITY TO HIS STATE MEETING

Peculiar things are happening in "the house of medicine" today. Bureaucrats in Washington are using IBM techniques to determine what John Jones, M. D. in Spotted Horse can charge for every service he renders patients served, where government funds are wholly or partially employed. Hospitals in many areas are assuming the role of community physician and creating a public image that the fount of medical knowledge and authority rests on Hill-Burton foundations rather than in the office of the individual family physician. And with this ominous change in the structure of medical practice comes an equal and disturbing decline in the role of the county society and the state medical meeting in the important area of postgraduate medical education.

Why is this so, and need it continue to a point where the county society and the state medical meeting join the dodo and the carrier pigeon in oblivion?

At the turn of the century the county medical society was the "doctors' fraternity," and the annual state meeting was an occasion eagerly anticipated as a source of professional knowledge and an opportunity to discuss cases and professional problems with former teachers and colleagues in other cities. Those were the days when professional exchange of experience and avid attendance at lectures provided the best avenue for continued medical education. Medical movies were rarely available, TV wasn't even imagined outside of a few imaginative science writers of the Jules Verne type, and even access to literature was generally confined to the larger communities and those few high and mighty "giants" of the profession who were specialists in the art of surgery.

What a change today! The busy practitioner of 1962 is bombarded with literature; he is swamped with elaborate brochures on a multiplicity of medications and professional aids; he is interrupted in the care of patients by earnest and persistent detail men; his hospital staff demands his presence at frequent meetings; his specialty group or GP unit seeks his attendance at scientific meetings (with bait of credit, or threat of expulsion!) . . . in short, the physician of today is either a nomad from his practice, or he throws up his hands and eliminates all meetings other than three or four each year.

In such a situation many state medical meetings are finding themselves among the "also rans." They can provide little of the glamour or overwhelming program offerings of an A.M.A. meeting. Nor can they successfully compete with the social pull of the resort conferences (with a chance for a bit of gambling and night-clubbing within the prescribed rules of the Internal Revenue Department!).

And yet, a state medical meeting has something of **special** value to the practitioner which is worth preserving. But it cannot survive if an increasing number of physicians by-pass it and restrict their attendance to regional or national meetings of their specialty or area of general practice.

A state meeting . . . YOUR state meeting . . . is the finest "grass roots" medical meeting which can be developed. It's big enough to provide a stimulating program with out-of-state speakers, and to encourage the development and presentation of good scientific exhibits from local hospital staffs or clinic groups. At the same time it's small enough to provide renewed fellowship with former classmates and faculty members to a degree which is lacking in any national or even regional conference.

Why then, is the average state meeting suffering a severe case of attendance malnutrition? In some instances poor program planning may be the answer. Often there is a lack of imagination in providing new modes of presentation. Panels, demonstrations, movies, TV, "wet clinics" . . .

all are an important part of a modern-day medical convention, and the program committee which fails to utilize these teaching devices is issuing a blanket invitation to stay away from the meeting itself.

Even the technical exhibits at a well-run medical meeting have educational benefits to be considered. True, a certain proportion of physicians regard the technical exhibits as "commercialization" of the scientific program, and hesitate to taint themselves by stopping at any of the booths. However, there are many more physicians from smaller communities or in rural practice who welcome the opportunity to see what new drugs and appliances are being offered, without the pressure of a full waiting room of patients.

No medical meeting exhibit should be continued solely on the basis of financial support of the scientific program itself. No one should ask the physician to "sell his soul", just to support a commercial exhibit. The day of the "hard sell" among exhibitors at medical meetings is a thing of the past. A few companies still emphasize direct sales at medical conferences, and their representatives are a bit on the over-eager side. But most of the ethical houses conduct their physician contacts in keeping with the professional standards of those in attendance.

The educational aspects of the modern-day medical exhibit should not be overlooked or derided by the purist MD who scornfully brands all displays as "technical prostitution." He is possibly unaware of the fact that most of the scientific exhibits he admires and studies are largely supported by funds from the commercial houses. He accepts the lectures and demonstrations on the scientific program itself with little recognition that without exhibit support he would be asked to pay a registration fee of $25 to $50.

Those who view medical meetings, from the hospital staff level right up to the summer meeting of the A.M.A., are concerned that in some areas physicians are failing to appreciate the importance and unique qualities of their state meeting. By their failure to actively support their meeting on a state level they are threatening the demise of a meeting which has much to offer in terms of close professional fellowship and keeping the quality of medical practice in the immediate area alert to new developments as they relate to individual practice.

The public is prone to criticize the medical profession for its alleged major concern with the financial returns of their practice. Attendance at medical meetings represents a loss of income which is often overlooked by patients. It is important that annually your patients either read this legend on your office door: "To My Patients: I am Attending My State Medical Meeting so I Can Better Serve You. Please call Doctor ..... in My Absence," or your office girl should be asked to explain your absence in a similar manner.

Your state meeting is worthy of your support . . . and it can only remain a vital factor in the life of your state if you attend and take an active role in all aspects of the meeting.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

ANNUAL SCIENTIFIC SESSION LOUISIANA HEART ASSOCIATION

The Annual Scientific Session of Louisiana Heart Association will be held in Lafayette at the Municipal Auditorium, on Saturday, April 28, 1962 from 9:00 A.M. to 5:00 P.M. There will be special events for the ladies and a Crawfish Supper will be held on Friday night, April 27.

Out-of-state participants include:

W. Sam Henly, M. D., Assistant Professor of Surgery, Baylor University, Houston, Tex., "Clin-

ical Aspects and Management of Dissecting Aneurism of the Aorta".

Joseph K. Perloff, M. D., Assistant Professor of Medicine, Georgetown University, Washington, D. C., "Physiological Basis of Cardiac Auscultation".

Guide to Anticoagulant Therapy, a recent publication of American Heart Association, is available free of charge to physicians upon request to the state office of Louisiana Heart Association, 2069 Caton Street, New Orleans 26, or by telephoning 288-8331.

COURSE ON CARDIAC AUSCULTATION

The University of Texas Postgraduate School of Medicine announces a course on Cardiac Auscultation, scheduled for Thursday, Friday and Saturday, April 19, 20 and 21, 1962. The course will be held in the Auditorium of the Jesse H. Jones Library Building in the Texas Medical Center, Houston, Texas.

Dr. Aubrey Leatham, of St. George's Hospital, London, England, who is a Member of the Royal College of Surgeons of England, the Royal College of Physicians of London and a world's authority on cardiac heart sounds, will be the James J. and Una Truitt Lecturer for this course.

There will be no registration fee. For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 102 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

AMA TO MEET IN CHICAGO'S NEW McCORMICK PLACE

Physicians attending the 111th Annual Meeting of the American Medical Association June 24-28 in Chicago will view over 700 exhibits and hear scientific papers in the air-conditioned comfort of America's newest and most modern exposition center—McCormick Place.

Doctors who attended the last Annual Meeting held in Chicago—in 1956—have unpleasant memories of extremely hot, humid weather and poor facilities on the old Navy Pier. Those planning to attend the 1962 meeting are looking forward to their first visit to the new $34,000,000 convention "city" on the lakefront which boasts unobstructed exhibit areas, theaters, attractive restaurants and lounges, shops, and esplanades.

McCormick Place, located on Lake Michigan at 23rd Street, a short distance south of the Loop, is a huge, horizontal structure three blocks long, a block wide and equal to a ten-story building in height. It is fully equipped to handle 30,000 people an hour as they visit exhibits.

Gross exhibit space is 310,000 square feet in the principal section, roughly the area of six football fields. Exhibitors are welcoming the convenient arrangement whereby a train of railroad cars can run inside the building on a special spur for unloading equipment.

There is ample parking for everyone attending the meeting—exhibitors and others in addition to physicians—in huge lots adjoining the building. McCormick Place is a ten-minute taxi or bus ride from the hotel area in the Loop.

Hotel rooms will be available for everyone. There are 45,700 hotel rooms for guests in the central Chicago area, plus more than 100 hotels in and around the city.

The 1962 meeting will be the first in recent history in which it will be possible to house the entire meeting—scientific sessions, scientific and industrial exhibits, section meetings—under one roof.

CHEST PHYSICIANS PLAN FIVE POSTGRADUATE COURSES IN 1962

The Council on Postgraduate Medical Education of the American College of Chest Physicians, under the Chairmanship of Dr. J. Winthrop Peabody, Sr., Washington, D. C., has planned five postgraduate courses to be held in New York, Philadelphia, Chicago, and Detroit during 1962. The courses are listed below:

Cardiopulmonary Problems in Children
Chicago, July 23-27, Edgewater Beach Hotel

Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs
Philadelphia, September 17-21, Warwick Hotel

Clinical Cardiopulmonary Physiology
Chicago, October 22-26, Knickerbocker Hotel

Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs
New York, November 12-16, Barbizon-Plaza Hotel

Occupational Diseases of the Heart and Lung
Detroit, December 3-7, Statler-Hilton Hotel

Tuition for each course is $75.00 to members of the American College of Chest Physicians and $100.00 to non-members.

Applications for the 1962 postgraduate courses are being accepted in the order received and should be submitted as early as possible.

Additional information may be obtained by writing to Mr. Murray Kornfeld, Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CONFERENCE ON GENERAL SURGERY

University of California School of Medicine, in cooperation with U. C. Extension, will present a three-day conference on "General Surgery" April 26-28 at the U. C. San Francisco Medical Center.

Faculty of the U. C. Medical School will be joined by guest speakers John P. Bunker, professor of anesthesia, Stanford University School of Medicine; Frank Glenn, surgeon-in-chief, New York Hospital, Cornell Medical Center; James D. Hardy, chairman, department of sur-

gery, University of Mississippi School of Medicine; and L. D. Howard, Jr., adjunct clinical professor of surgery, Stanford University school of Medicine.

A conference program and application forms may be obtained from Continuing Education in Medicine, U. C. Medical Center, San Francisco 22, Calif.

FOURTH ANNUAL MEETING SOUTH CENTRAL ASSOCIATION OF BLOOD BANKS

The fourth annual meeting of the South Central Association of Blood Banks was held at the Hotel Texas in Fort Worth, Texas, March 9 and 10, 1962 was well attended by blood bankers throughout the six-state area.

In addition to the presentation of scientific papers, a workshop was presented by Hyland Laboratories, Los Angeles, California which provoked many favorable comments.

At the business session on Friday, March 9, the following officers and district directors were elected to serve the Association for 1962:

E. Richard Halden, Jr., M. D., Fort Worth, Texas—President

David E. Soules, Ph.D., Dallas, Texas—President-elect

Donald A. Sutherland, M. D., Dallas, Texas—Vice-President

Mrs. Florence Del Prete, Secretary, Amarillo, Texas

Mr. I. C. Scott, Treasurer, Lafayette, Louisiana

District Directors:

William S. Orr, Jr., M. D., Little Rock, Arkansas

Norma M. Bender, M.S., M.T. (ASCP) B.B., Baton Rouge, Louisiana

Robert S. Cooke, Jr., M. D., Hattiesburg, Mississippi

Harold V. Beighley, M. D., Albuquerque, New Mexico

Tom S. Gafford, Jr., M. D., Muskogee, Oklahoma

Raymond St. Peter, M.T. (ASCP), Beaumont, Texas

Dallas, Texas was selected as the meeting site for 1963, the dates to be announced later.

CHEST PHYSICIANS ESTABLISH RESIDENT LOAN FUND

The American College of Chest Physicians has established a fund providing for loans to resident physicians to stimulate interest in postgraduate study of chest diseases and to assist postgraduate students in continuation of studies in diseases of the chest (including diseases of the heart and lungs).

Distribution of the funds is under the jurisdiction of the Committee on Resident Loan Fund of the College. Dr. M. Jay Flipse, Miami, is Chairman of the Committee. Other committee members are Dr. David A. Cooper, Philadelphia, and Dr. Philip H. Narodick, Seattle.

Any physician who has completed an internship of one year or more in an acceptable hospital may apply for a loan to continue in the specialty of chest diseases. Loans are made only to physicians serving residencies in chest medicine and cannot be made to physicians engaged in practice.

Application forms may be secured by writing to the Committee on Resident Loan Fund, in care of the Executive Offices of the American College of Chest Physicians, 112 E. Chestnut Street, Chicago 11, Illinois.

PLEA MADE FOR ACTIVE TETANUS IMMUNIZATION

Routine active immunization against tetanus was recommended for all persons recently in an article in the March 10 Journal of the American Medical Association.

Tetanus, also called lockjaw, is an infectious disease, often fatal, which is caused by a germ which invades the body primarily through wounds. The germ produces a poison, or toxin, which causes muscle spasms, particularly those of the neck and lower jaw.

Active immunization consists of a series of injections of a toxoid containing modified toxin which stimulates the body's production of antibodies to counteract the toxin. Lacking this immunization, the disease may be prevented by injecting an antitoxin from equine blood serum which contains the antibodies themselves (passive immunization) as soon as possible after an injury occurs.

Reactions to active immunization are rare, but reactions to passive immunization are much more frequent and can be severe, Dr. H. William Bardenwerper, Milwaukee, Wis., warned in the Journal.

Sickness results in an estimated 15 to 30 per cent of the persons receiving the more than two million doses of antitoxin administered yearly, he said. Death is reported to occur in 1 out of every 100,000 persons given the antitoxin, he said.

The sickness, termed serum neuritis, usually causes intense pain involving the muscles and paralysis of varying degree, he said. Recovery can require anywhere from six months to two years and permanent muscular weakness results in about 20 per cent, he said.

Another disadvantage of the antitoxin is its reduced efficiency on succeeding administrations, he said.

Most communities now have established programs for the active immunization of infants and school children against tetanus, the author said. However, he said, there is no program for providing subsequent booster injections for these

children or for immunized veterans of World War II and the Korean conflict and no program has been provided for older children and adults.

The efficiency and safety of active immunization "urgently recommend" a concentrated campaign to protect all persons from tetanus in this way, he said.

Mass disasters requiring mass protection against tetanus "must be considered as an increasing possibility," he added.

AMA TO PUBLISH HANDBOOK OF MEDICAL TERMINOLOGY

The American Medical Association will publish in June the first edition of a paperback, pocket-size guide to the preferred medical terms of all important diseases, it was announced recently.

The handbook represents the first step in developing a system of correct medical terminology so that physicians from all parts of the world can understand each other, Dr. Burgess L. Gordon, AMA's director of nomenclature, said.

It will provide a definition of each disease indicating the known or possible causes and the most characteristic disturbances and findings, and through frequent revision will serve as a focal point of expanding medical knowledge, he said.

It will be kept as nearly up to date as possible. Revised editions are anticipated every 12 or 18 months.

No similar medical publication of handbook size is available for medical students, hospital staff, practicing physicians or medical record librarians.

Entitled "Current Medical Terminology," the handbook will improve communication and understanding within the profession by promoting the use of correct terminology. It also should be invaluable in the coding and filing of medical information which is essential to further research and advances in medicine.

The rapid pace of medical developments in the post-World War II years placed a heavy burden on old methods of compiling and disseminating up-to-date terminology, Dr. Gordon said.

New or modified concepts emerged "even before the printer's type turned from hot to cold," he said.

Standard Nomenclature of Diseases and Operations (SNDO), the official listing of diseases published every 10 years since 1928, became "excessively large and complicated," he said.

The 1961 SNDO carries 18,000 names in a hard-cover book of 964 pages. The same condition is sometimes referred to under several different names, causing confusion.

This situation led to a decision in April, 1960, for the AMA to publish a handbook of all important diseases and conditions listed in SNDO, the International Classification of Diseases, medical dictionaries, and standard books of medicine and the specialties to standardize terminology and facilitate the professional and administrative pursuits of modern medicine.

The first issue of Current Medical Terminology, eliminating duplication and outdated terms, will contain less than 500 pages and sell for $2, the cost of publication.

It will list alphabetically 4,000 diseases and conditions, including psychological and neurological disorders, and give definitions based on what is generally considered established data. The definitions will give a brief, overall picture of the disease, including the causes, symptoms, laboratory findings, pathology, and complications.

The terms were selected on the basis of general acceptance or usage for at least three years.

The enormous project was expedited with the aid of a computer. Once the book was developed, data was fed into the IBM machine which assembled and alphabetized the material, finally turning out copy ready for the printer.

The computer also will make it possible to keep a "running check" on the accuracy of the terminology, according to Dr. Gordon.

With the help of medical schools, practicing physicians and several large urban hospitals, he said, it is hoped that a cross-section evaluation of patient records can be developed to establish the frequency of the different manifestations of disease. When fed this information on punch cards, the computer can quickly and accurately determine how often the various elements of a disease occur and in this way show whether the definition in the handbook is accurate or needs revision, he said.

Current Medical Terminology is not regarded as a replacement for SNDO, he added, but rather a companion to the larger book.

BOOK REVIEWS

The Chemotherapy of Tropical Diseases; by Sir Philip Manson-Bahr, M. D., F.R.C.P., D.T.M. & H. (Cantab), Consulting Physician to the Hospital for Tropical Diseases, London, and John H. Walters, M. D., F.R.C.P., Lt. Colonel I.M.S. (ret), Physician, The Hospital for Tropical Diseases, London. Charles C Thomas, 1961, 164 pages. $7.00.

This book was composed as one of the Monographs in American Lectures in Living Chemistry. The authors attempt to bring into one volume an accurate and up-to-date account of the chemotherapy of tropical diseases. Workers in Tropical Medicine and Parasitology or physicians who may have occasion to treat patients with the diseases discussed will find it useful to have on hand the data concerning the recommended drugs, technics of their administration, their manufacturers, synonyms and chemical names. The information in general agrees with the consensus of authorities in this field. On the other hand, the book is not a critical review of literature on the subject. The authors neither weigh the reliability of published works on various means of treatment nor lean heavily on their own experience. It is regrettable that two such experts as the authors should deprive us of their opinions, due no doubt to the limitation with regard to the size of the volume.

In discussing the treatment of amebiasis, no distinction is made as to type of disease. This may be due to the common British tendency to disregard non-dysenteric amebiasis as a nonpathogenic condition not warranting treatment at all. Nevertheless, it is surprising that amebic abscess of the liver is not handled as a distinct topic. Selection of oleoresin of aspidium over Atabrine for treatment of teniasis is not in keeping with widespread American experience. Space was unnecessarily spent on description of Hetrazan in treatment of ascariasis. It is too ineffective to warrant more than listing. Recommendation of bephenium for treatment of hookworm infection in marasmic children should be qualified. Vomiting and diarrhea in North American children given the drug is so common that the drug should not be given to marasmic ones from the ethnic group. African and Asian children seem to tolerate it better. The authors neglect S. American literature, as for example in their failure to mention Glucantime in treatment of American cutaneous leishmaniasis.

It may well be that most of the faults of the type mentioned above are the result of the authors' experience being mostly in the Old World. This fact should be kept in mind by physicians using this book in the Americas, but they will find it adequately dependable in most respects.

RODNEY C. JUNG, M. D.

Speech and Hearing Problems, A Guide for Teachers and Parents; by Charles E. Palmer, Ph.D. Charles C Thomas, 1961, 137 p. $5.50.

The book is divided into two sections. Part I: Speech Problems, is divided into five chapters dealing with 1. Some Questions and Answers about Speech Problems; 2. Learning to Talk; 3. Problems of Articulation; 4. Stuttering and Non-fluency; and 5. Voice Problems.

The second section dealing with Hearing Problems is divided into chapters on 6. Some Questions and Answers about Hearing loss; 7. The Ear and Its Functions; 8. Helping a Child Who is Hard of Hearing; 9. Helping a Child Who is Deaf; 10. Some Parting Thoughts. The entire book is in the question and answer format, not just the chapters so indicated in the Table of Contents.

As indicated in the title, this book is designed for parents and teachers to use in working with a child who has a speech or hearing problem. The Author's description of it is " 'a first aid manual.' It is not a substitute for the work of a professionally prepared speech correctionist or teacher to initiate a program of correction without first securing professional advice." This is a commendable goal and considered from this aim this book is an excellent presentation of the development of speech and language and of some of the problems, especially in the so-called functional areas. The overall background information is presented interestingly and, on the whole, accurately. Some may question the omission of the discussion of the importance of lymphoid tissue blocking the Eustachian tube and the need for treatment, even if it does not produce a noticeable hearing impairment. Also, in the discussion of causes of perceptive loss, no mention is made of the role of blood incompatibility. Some speech therapists may quibble with the advisability of using the (r) sound as an example of a sound to be taught, especially since the final (r) is not generally pronounced in Southern speech.

These points are all rather minor ones with which one may take exception, depending upon his orientation and do not seriously detract from the worth of the book as a *guide.* However, the author has seriously weakened the usefulness of the book by his oversimplification of material, techniques, and problems as found in many children. "If professional help is not available, this book will enable you to 'do something'—something helpful and constructive." This reviewer doubts the ability of the parent or teacher to carry on a successful program of speech correction or teaching language to a deaf child simply by following this book, no matter how smart and conscientious that individual may be. Encouraging a parent to think that such teaching can be done at home may serve to retard their seek-

ing professional help for the child who needs a long-term educational program along with the specific need for speech therapy.

If this information is kept in mind, this book can be of value as a guide to be recommended to parents who need more help in understanding their child's problems in learning to talk.

JEANETTE K. LAGUAITE, PH.D.

The Cervix Uteri and Its Diseases; by Frederic Fluhmann, B. A., M.D., C.M., W. B. Saunders Co., 1961, 556 p. $14.00.

This first edition text merits early recognition as a classic in the field of gynecology. Indeed, it should serve as a model and a challenge to other medical authors and publishers.

Eminently qualified for the task he has consummated so successfully, Dr. Fluhmann has contributed a much needed volume at a most opportune time, so that his text is certain to become the standard in its field. No gynecologic or obstetrical library—private or institutional—should be deprived of the educational advantages to be derived from this volume.

Author, illustrators, and publisher are to be congratulated on the timely creation of a highly desirable text with which it would be difficult to find fault in any respect. Durably bound, its high quality paper bear pertinent and authoritative subject matter, logically organized, and composed in comfortably read print.

It is easy to accept the author's preface admission that "the illustrations required almost as much time and effort as the preparation of the text," and this is as it should be. One is immediately impressed that the laudable results more than justify the efforts. Here again, the author and publisher have set a worthy standard. The numerous black and white illustrations are of unusual quality in care of selection, clarity of reproduction, and integration with the text. Captions and legends accompanying the illustrations lend no confusion or uncertainty as to exactly what is being depicted. This model fairly shouts the too seldom heeded thesis that original illustrations are a "sine qua non" in a worthwhile medical publication. Therein is spawned the hope that we are entering a new era which terminates the sickening practice of endlessly reproducing dreary illustrations in medical text-books, borrowed from ancient sources, and which have long since lost any questionable value they may have had in the source material. May they now rest in peace within their contemporary texts!

No illustrative material, which might he appraised as beneath the quality standards of the text itself deserves inclusion in that volume. It might seem too basic to mention, but this reviewer feels quite strongly that author and publisher should mutually insist that every illustration included must enrich and clarify the text, both in context, and quality of reproduction.

Consistent with the above one is struck by the superiority of his original illustrations as contrasted with the diminished clarity of the borrowed illustrations included in the chapter on surgical treatment of cervical carcinoma. Descriptions of the procedure, so conveniently placed alongside the illustrations deserve more lucid depiction. Granted that one thoroughly familiar with the procedure can discover what is intended to be illustrated, it should be admitted that the very inclusion of this material presupposes the reader's need for enlightenment.

The above is not intended as a criticism of the original text from which the illustrations were borrowed—let that text be judged on its own merits. Therein, the drawings were original, and consistent with other related illustrations. Perhaps in his second edition Dr. Fluhmann will enrich his already wealthy volume by including new, original illustrations in this section. Slightly larger "zoom" drawings with less irrelevent background should afford greater contrast and clarity of detail.

Ending with a richly deserved recognition it must be recorded that the numerous photomicrographs included in this text are unexcelled.

E. W. NELSON, M. D.

House of Healing, the Story of the Hospital; by Mary Risley, Doubleday & Company, 1961, 288 p., $4.50.

As the title reads this is a story, a story that is so well told that the reader experiences a sense of enjoyment throughout the entire book. The author exhibits such a keen historical perspective that at no time do you feel the lack of a bibliography or the failure to give sources lessens the value of the work. It is usually customary to read the introduction or foreword to learn of the author's purpose in writing the book, but in this work there are no such guide posts. You plunge immediately into the story. This is by no means a technical history of hospitals, nor is it a chronicle. Rather it is a discussion of the social conditions existing at different periods of world history and how these conditions affected the development of hospitals.

Perhaps it comes rather as a surprise to learn of the accomplishments of the art of healing during the period of classical antiquity. Hospitals were clean and patients on being admitted to them were bathed, anointed with oils, and put for a varied number of days on special and healthful diets. In this day of tensions, it is interesting to learn that Greek physicians tried to restore the patients' balance of mind and sense of confidence. This period of enlightenment was followed by the Dark Ages in which European hospitals presented some of the worst environments ever endured by suffering humanity. Dirt and filth was the order of the day. The bright spot was the various monastic orders which car-

ried the principle of Christian love and charity to their sick brethren. Like the story of medicine, the story of hospitals from the ninth through the twelfth centuries moves to the East. With the beginning of the Renaissance, the building of hospitals gradually became the responsibility of the layman and the holy orders created during the Crusades. Aiding the efforts of the church, which continued to build and staff hospitals, others such as kings, towns, and merchants began to finance them. After 500 years of neglect a large number of such institutions were founded in London during the beginning and middle of the 18th century. During this time reforms in hospital administration and nursing came into being. St. Vincent de Paul founded an order of nuns who were not cloistered. Lay nurses began to find their way into hospitals. In 1800 the work of Elizabeth Fry, Quaker prison reformer, began. In 1856 Kaiserwerth Hospital was founded to train deaconesses. Florence Nightingale began her work in 1853, and in 1860 and 1873 nursing schools were founded at St. Thomas's and Bellevue Hospital. The book continues with a discussion of hospitals in America and the part hospitals have played in medical education, and closes with some review of the problems of the future, particularly those created when patients are faced with a long illness.

In some respects you feel the author did not delve deep enough into the various problems connected with the founding and organization of hospitals, but if she did this work could have easily stretched into a work of many volumes. As it is the author succeeds admirably in giving a running account of the story of hospitals from the dawn of history to the present day.

WILLIAM D. POSTELL

Pathology, 4th ed., edited by W. A. D. Anderson, M. D., Mosby, 1961, 1389 p., price $18.00.

A detailed analysis of this lengthy work would impose an unrewarding hardship on the reader; therefore, I have chosen to describe only those features which would seem to be of the most interest to the most readers.

An overall idea of the quality of this book may be gained by the observation that the previous editions have been highly recommended to medical students in many schools and may be found, usually in a well-worn condition, in the libraries of most departments of pathology. I can see no reason why this edition should not enjoy equal popularity.

Among the virtues of this book are the exceptional clarity of the illustrations and photographs (1385 illustrations and seven color plates), the wide variety of material presented by thirty-five contributors, and the somewhat "basic" approach utilized in the discussion of disease processes such as inflammation, neoplasia, hypersensitivity, etc. On the other hand it cannot, by any stretch of the imagination, serve as a complete reference on any one subject, but adequate bibliographies are given, and these may furnish the reader with more specific information.

The book is loosely divided into two categories: discussions of disease processes *per se* and discussions of specific organs and organ systems as they are affected by diseases. This approach not only gives the reader the necessary understanding of mechanisms of disease but also furnishes him with specific information which may be of aid in making the correct diagnosis on a piece of tissue.

A few welcome additions since the last edition are noteworthy. A chapter dealing with the "hypersensitivity" and collagen diseases includes some of the newer concepts in immunology and auto-immune diseases, and these are presented with laudable absence of dogmatism. The new section on mesenchymal tumors includes such recently established entities as nodular fasciitis and is a useful starting point for the study of soft tissue tumors. The chapter dealing with disturbances of fluids and electrolytes is long overdue in a text dealing with the totality of human disease; however, the discussion in this book is too lengthy, difficult to read, and leaves the reader with no idea of what is important and what is not. The remainder of the book contains a few minor revisions.

I would highly recommend this book for the medical student studying pathology, the pathology resident needing a single text to introduce him to a wide variety of subjects, and the practitioner who is not only interested in current concepts regarding some of the recently recognized diseases but also in understanding the diseases present in the patients he sees from day to day.

WILLIAM S. WEEMS, M. D.

Radiation: Use and Control in Industrial Application; by Charles Wesley Shilling, M. D., Sc. D., Deputy Director, Division of Biology and Medicine, United States Atomic Energy Commission, Washington, D. C. 29 Illustration. Grune and Stratton, Inc. New York, 1960, 233 p. $6.75.

The author of this concise book states in the preface that he has attempted to present "information (on radiation) in a non-technical and concise form". This book is just that. The book is clearly written and set in easy to read type. Line drawing illustrations are used. It is not a reference or textbook. This book aims at the practicing industrial and general physician who find themselves faced with everyday questions on radiation.

Early chapters are devoted to an explanation of radiation and the electromagnetic spectrum. Consideration is given to sources of medical and atomic radiation and the dose range obtainable therefrom. Several chapters deal with radiation

effects considering various doses from acute and chronic exposure. These chapters contain many thought provoking passages which illustrate that much of what has been written or said previously by other authors has been poorly analyzed. The author is optimistic about radiation control and believes that with necessary safety and educational methods little radiation effects need occur. Several case histories are presented. The control of radiation in medical and industrial installations is discussed. A good chapter on general and specific treatment is given. Legislative control and various report forms for industry are featured. Adequate chapters cover monitoring, decontamination, and waste disposal. The concluding chapters consider the uses of radioisotopes in medicine and industry.

A short glossary of the more common terms and educational sources of radiation information is given in the appendix. The book is deficient in that sources of the diagrams and case histories are not given and no references are cited in the text, although a bibliography is included in the appendix.

An interesting chapter on radiation accidents is presented with several reports on what has become known as "incidents". This chapter should serve to illustrate that accidents can and may occur and that education of personnel, physicians, and the public is necessary to prevent foolish, irrational behavior, and in some cases needless "incidents".

JOSEPH L. IZENSTARK, M. D.

Medical Pharmacology; by Andres Goth, M. D. C. V. Mosby Company, St. Louis, 1961, 551 p. $11.00.

The author's avowed reason and purpose for writing this book is to present basic "principles and concepts" of Pharmacology in a book of moderate, readable size. While there are certain clinically-oriented deviations from the original plan, it has been largely accomplished. The worst things that can be said concern the introductory and "General Aspects" chapters. The introduction is not written in the most stimulating manner. Accordingly interest and love of subject are not communicated to the reader. This criticism holds for the body of the book as well. This reviewer felt that the "General Aspects" were rather incompletely discussed.

Pharmacology has long sought the ideal text for Medical and Paramedical students. This book represents one of the closer approximations to that ideal.

PAUL S. GUTH, PH.D.

The Hand; by H. C. Marble, M. D. A Manual and Atlas for the General Surgeon, Saunders, 1960, 207 p. $7.00.

This 197 page text, for general surgeons, is written in basic terminology, and will be found both easy and interesting reading. Included within its chapters one will find rapidly, descriptive references to such major topics as anatomy, physiology, history — physical examination, to the treatment of open and closed fractures, infection and tumors of the hand and forearm. It goes without saying that certain aspects of this text are necessarily technical, controversial, and will require time and conscientious studying, but it emphasizes the importance of thorough knowledge before undertaking surgery of the hand.

P. R. MEYER, JR., M. D.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

ADLER—TEXTBOOK OF OPHTHALMOLOGY

Concentrates on the ophthalmic problems of the non-specialist—stressing diagnosis, treatment and indications that call for a specialist.

MAJOR AND DELP—PHYSICAL DIAGNOSIS

Offers step-by-step procedures for examining every area of the body by inspection, palpation, percussion and auscultation.

REID—TEXTBOOK OF OBSTETRICS

Gives you not only a clear picture of normal pregnancy and labor, but sound insight as well into the medical complications that may arise.

PUBLICATIONS RECEIVED

Appleton-Century-Crofts, Inc., N. Y.: Dissemination of Cancer: Prevention and Therapy, by Warren H. Cole, M. D., Gerald O. McDonald, M. D., Stuart S. Roberts, M. D., and Harry W. Southwick, M. D.; Surgery of the Ambulatory Child, by S. Frank Redo, M. D.

Intercontinental Medical Book Corp., N. Y.: Practical Management of the Obese Patient, by Frank L. Bigsby, M. D., and Cayetano Muniz, M. D.

Louisiana State University Press, Baton Rouge: The Rudolph Matas History of Medicine in Louisiana, Volume II, edited by John Duffy.

W. B. Saunders Co., Phila.: General Pathology, based on Lectures delivered at the Sir William Dunn School of Pathology, University of Oxford, edited by Sir Howard Florey (3rd edit.); Modern Concepts of Hospital Administration, edited by Joseph Karlton Owen, Ph.D.; Current Therapy — 1962, edited by Howard F. Conn, M. D.; A Textbook of Obstetrics, by Duncan E. Reid, M. D.; An Atlas of Head and Neck Surgery, by John M. Loré, Jr., M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Problems of Blood Pressure in Childhood, by Arthur J. Moss, M. D. and Forrest H. Adams, M. D.; The Human Testis: A Clinical Treatise, by Leonard Paul Wershub.



LOMOTIL®

(brand of diphenoxylate hydrochloride with atropine sulfate)

ANTIDIARRHEAL TABLETS and LIQUID

lowers motility / relieves cramping / controls diarrhea

Roentgenographic studies by Demculenaere[1] established that a single dose of 10 mg. of Lomotil slowed gastrointestinal transit within two hours and that it maintained its decelerating activity for more than six hours.

In diarrhea this lowered propulsion permits a physiologic absorption of excess fluid, lessens frequency and fluidity of stools and gives safe, selective, symptomatic control of most diarrheas. Concurrently, it conserves electrolytes and controls cramping.

Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

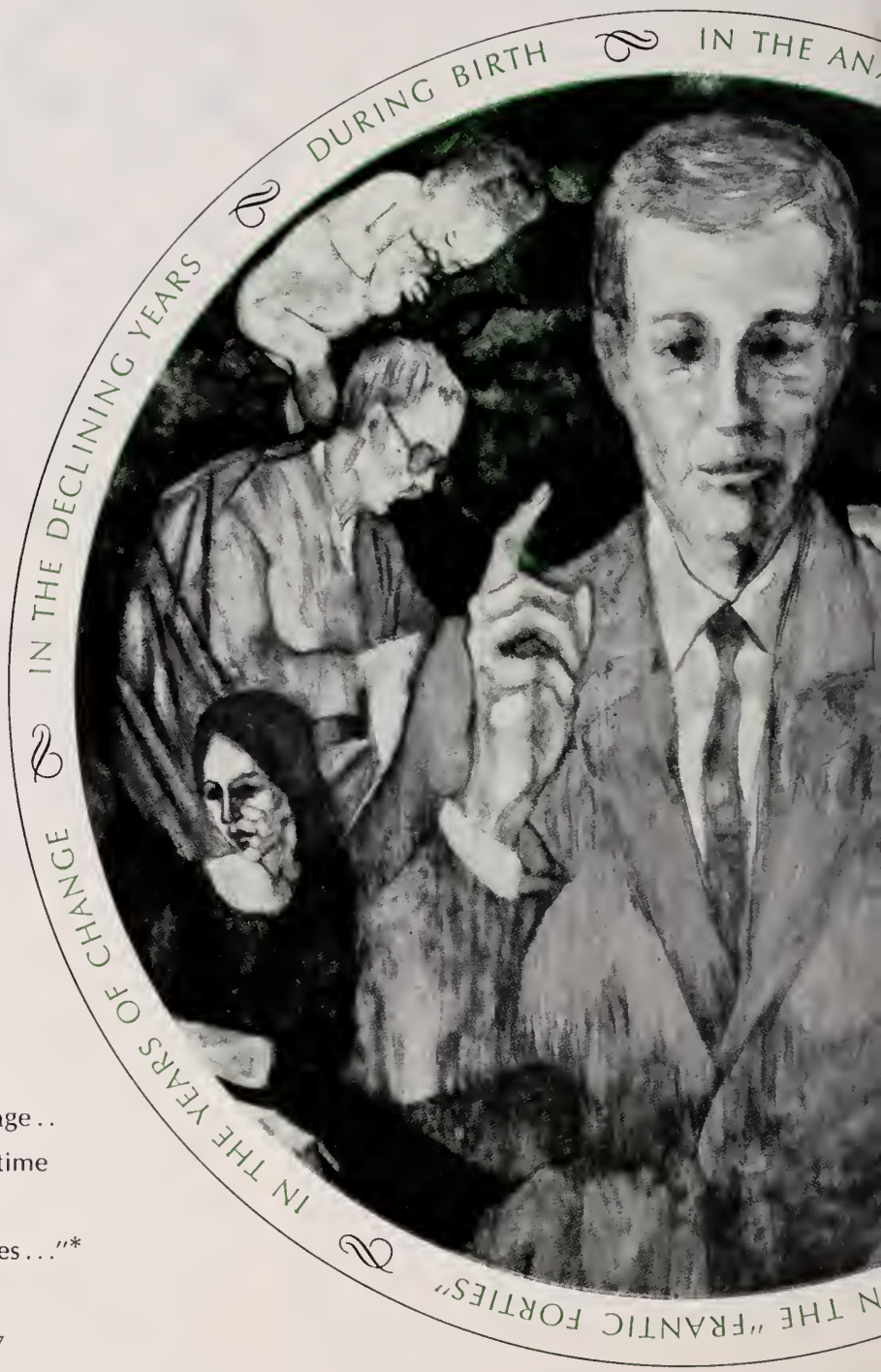
NOTE: Lomotil is an exempt narcotic preparation.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastrointestinal, Acta Gastroent. Belg. 21:674-680 (Sept.-Oct.) 1958.
2. Kasich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastroent. 35:46-49 (Jan.) 1961.
3. Weingarten, B.; Weiss, J., and Siman, M.: A Clinical Evaluation of a New Antidiarrheal Agent, Amer. J. Gastroent. 35:628-633 (June) 1961.

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Research in the Service of Medicine



"All the world's a stage..
And one man in his time
plays many parts,
His acts being seven ages..."*

*As You Like It, Act II, Sc. 7



through all seven ages of man

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in the "frantic forties"—For many patients in their "frantic forties," the pace never slackens—may even accelerate—while tensions multiply and physical resources dwindle. Out of this seedbed of stresses and anxieties grow much of the alcoholism, psychosomatic illness, and sympathetic overactivity of the middle years.

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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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IN BRIEF VISTARIL®

VISTARIL, hydroxyzine pamoate (oral) and hydroxyzine hydrochloride (parenteral solution), is a calming agent unrelated chemically to phenothiazine, reserpine, and meprobamate.

VISTARIL acts rapidly in the symptomatic treatment of a variety of neuroses and other emotional disturbances manifested by anxiety, apprehension, or fear—whether occurring alone or complicating a physical illness. The versatility of VISTARIL in clinical indications is matched by wide patient range and a complete complement of dosage forms. The calmative effect of VISTARIL does not usually impair discrimination. No toxicity has been reported with the use of VISTARIL at the recommended dosage, and it has a remarkable record of freedom from adverse reactions.

INDICATIONS: VISTARIL is effective in premenstrual tension, the menopausal syndrome, tension headaches, alcoholic agitation, dentistry, and as an adjunct to psychotherapy. It is recommended for the management of anxiety associated with organic disturbances, such as digestive disorders, asthma, and dermatoses. Pediatric behavior problems and the emotional illnesses of senility are also effectively treated with VISTARIL.

ADMINISTRATION AND DOSAGE: Dosage varies with the state and response of each patient, rather than with weight, and should be individualized for optimum results. The usual adult oral dose ranges from 25 mg. t.i.d. to 100 mg. q.i.d. Usual children's oral dose: under 6 years, 50 mg. daily in divided doses; over 6 years, 50-100 mg. daily in divided doses.

Parenteral dosage for adult psychiatric and emotional emergencies, including acute alcoholism: I.M.—50-100 mg. Stat., and q.4-6h., p.r.n. I.V.—50 mg. Stat., maintain with 25-50 mg. I.V. q.4-6h., p.r.n.

SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

PRECAUTIONS: Drowsiness may occur in some patients. The potentiating action of hydroxyzine should be taken into account when the drug is used in conjunction with central nervous system depressants. Do not exceed 1 cc. per minute I.V. Do not give over 100 mg. per dose I.V. Parenteral therapy is usually for 24-48 hours, except when, in the judgment of the physician, longer-term therapy by this route is desirable.

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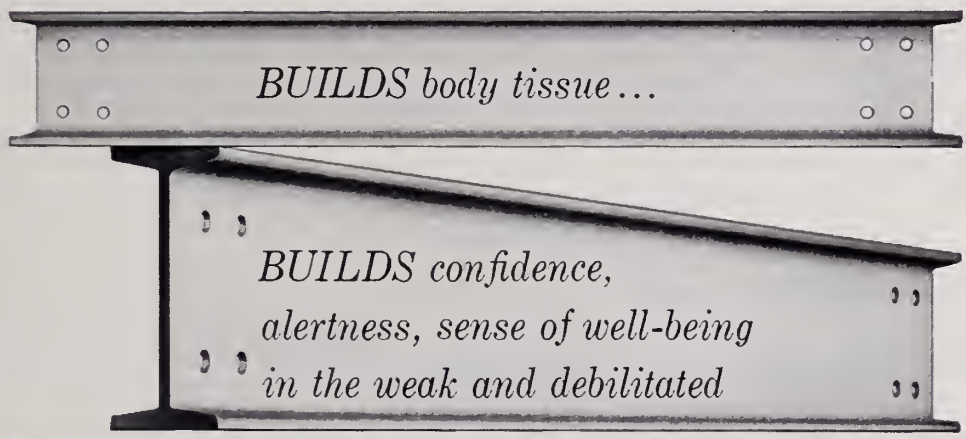
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1. Youmans, J. B.: Am. J. Med. 25:659 (Nov.) 1958

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arthritis "It is our practice to prescribe a multiple vitamin preparation to patients with rheumatoid arthritis simply to insure nutritional adequacy . . ."[3]

3. Fernandez-Herlihy, L.: Lahey Clinic Bull. 11:12 (July-Sept.) 1958.

digestive diseases Symptoms attributable to B-vitamin deficiency are commonly observed in patients on peptic ulcer diets.[4] Daily administration of therapeutic vitamins to patients with hepatitis and cirrhosis is recommended by the National Research Council.[5] 4. Sebrell, W. H.: Am. J. Med. 25:673 (Nov.) 1958. 5. Pollack, H., and Halpern, S. L.: Therapeutic Nutrition. National Academy of Sciences and National Research Council, Washington, D. C., 1952, p. 57

degenerative diseases "Studies by Wexberg, Jolliffe and others have indicated that many of the symptoms attributed in the past to senility or to cerebral arteriosclerosis seem to respond with remarkable speed to the administration of vitamins, particularly niacin and ascorbic acid. These facts indicate that the vitamin reserve of aging persons is lowered, even to the danger point, more than is the case in the average American adult."[6] 6. Overholser, W. and Fong, T. C. C. in Stieglitz, E. J.: Geriatric Medicine, 3rd edition, J. B. Lippincott, Philadelphia, 1954, p. 264.

infectious diseases Infections cause a lowering of ascorbic acid levels in the plasma; and the absorption of this vitamin is reduced in diarrheal states.[7] 7. Goldsmith, G. A.: Conference on Vitamin C. The New York Academy of Sciences, New York City, Oct. 7 and 8, 1960. Reported in: Medical Science 8:772 (Dec.10) 1960.

diabetes Diabetics, like all patients on restricted diets, require an extra source of vitamins.[8] "Rigidly limiting the bread intake of the diabetic patient automatically eliminates a large amount of thiamin from the diet. . . . There is some evidence of interference with normal riboflavin utilization during catabolic episodes."[9]

8. Duncan, G. G.: Diseases of Metabolism, 4th edition, W. B. Saunders, Philadelphia, 1959, p. 812. 9. Pollack, H.: Am. J. Med. 25:708 (Nov.) 1958.

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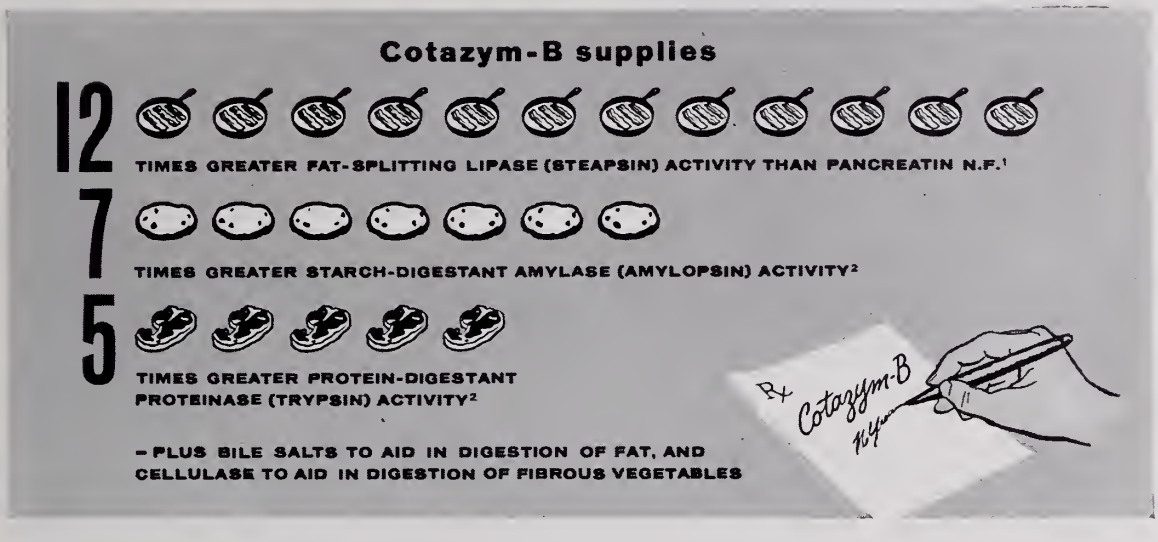
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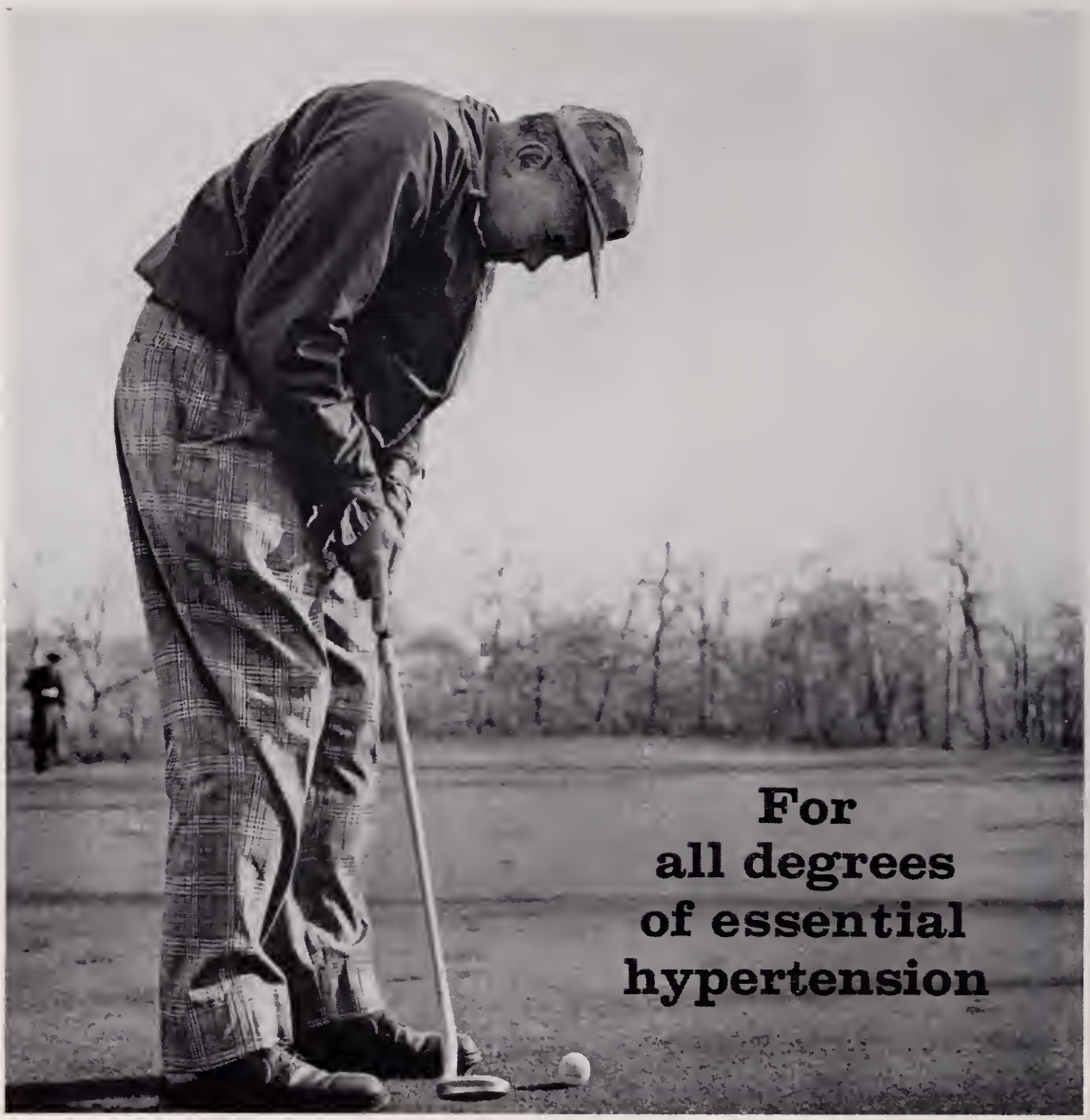
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REFERENCES: 1. Best, E. B., Hightower, N. C., Jr., Williams, B. H., and Carobasi, R. J.: South. M.J. 53:1091, 1960. 2. Analytical Control Laboratories, Organon Inc. 3. Best, E. B., et al.: Symposium at West Orange, N. J., May 11, 1960. 4. Thompson, K. W., and Price, R. T.: Scientific Exhibit Section, A.M.A., Atlantic City, N. J., June 8-12, 1959. 5. Weinstein, J. J.: Discussion in Keifer, E. D., Am. J. Gastro. 35:353, 1961. 6. Ruffin, J. M., McBee, J. W., and Davis, T. D.: Chicago Medicine, Vol. 64, No. 2, June, 1961. 7. Berkowitz, D., and Silk, R.: Scientific Exhibit Section, A.M.A., New York, June 25-30, 1961. 8. Berkowitz, D., and Glassman, S.: N. Y. St. J. Med. 62:58, 1962.

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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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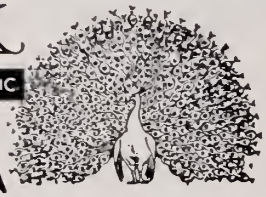
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References: 1. DeNyse, D. L.: M. Times *87*:1512 (Nov.) 1959.
2. Gruenberg, F.: Current Therap. Res. *2*:1 (Jan.) 1960.

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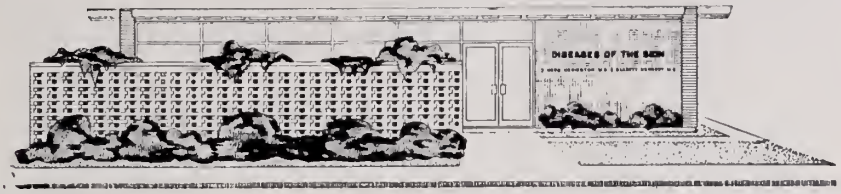
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1. Enactment of the National Cancer Institute Act which created the National Cancer Institute, and

2. Launching by the American Cancer Society of its first nationwide public education campaign out of which was to come a broad program of education, research and service through voluntary support, and

WHEREAS, the American Cancer Society was a major supporter of the National Cancer Institute Act and subsequently supported development and growth of the National Cancer Institute, and

WHEREAS, the National Cancer Institute and the American Cancer Society have demonstrated the need for complementary efforts by the people, on a voluntary basis, and the government, in the attack on this grave disease, and

WHEREAS, the fight against cancer has made remarkable progress since 1937 in the research laboratory, the hospital, the doctor's office, and the public's attitude; therefore

RESOLVED, that the American Cancer Society join with the National Cancer Institute in celebrating twenty-five years of the attack against cancer during the year 1962, which shall be called Cancer Progress Year, and further

RESOLVED, that the purpose of this Cancer Progress Year be to report to the public on where science now stands in cancer research, to intensify the efforts being made to persuade the public to act for its own protection, to improve the care of the cancer patient, and to step up all programs to speed the final victory over cancer.

NOTE: The above resolution was adopted by the ACS Board of Directors meeting in Seattle, June 8, 1961.

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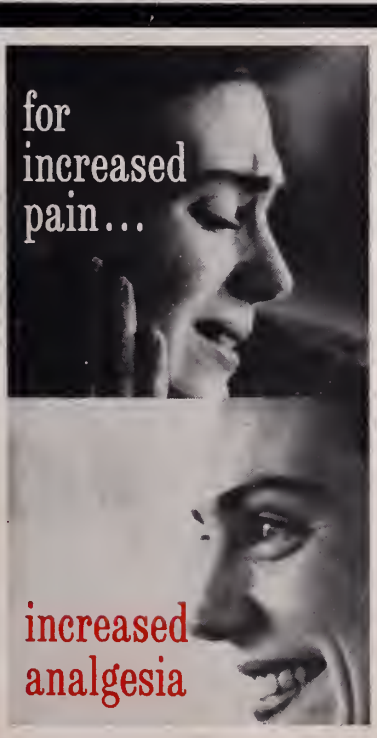
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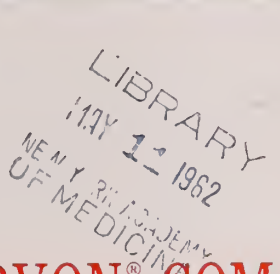
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Our child hygiene program received its first federal aid as the result of passage of the Maternity and Infancy Act of 1921 (Sheppard-Towner Act). More fortunate than some states, Louisiana was able to continue its child health work during the depression, although efforts were severely curtailed.

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Louisiana State Board of Health

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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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1. Ford, R. A., and Blanchard, K. Journal Lancet 78:185, 1958

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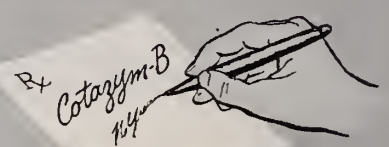
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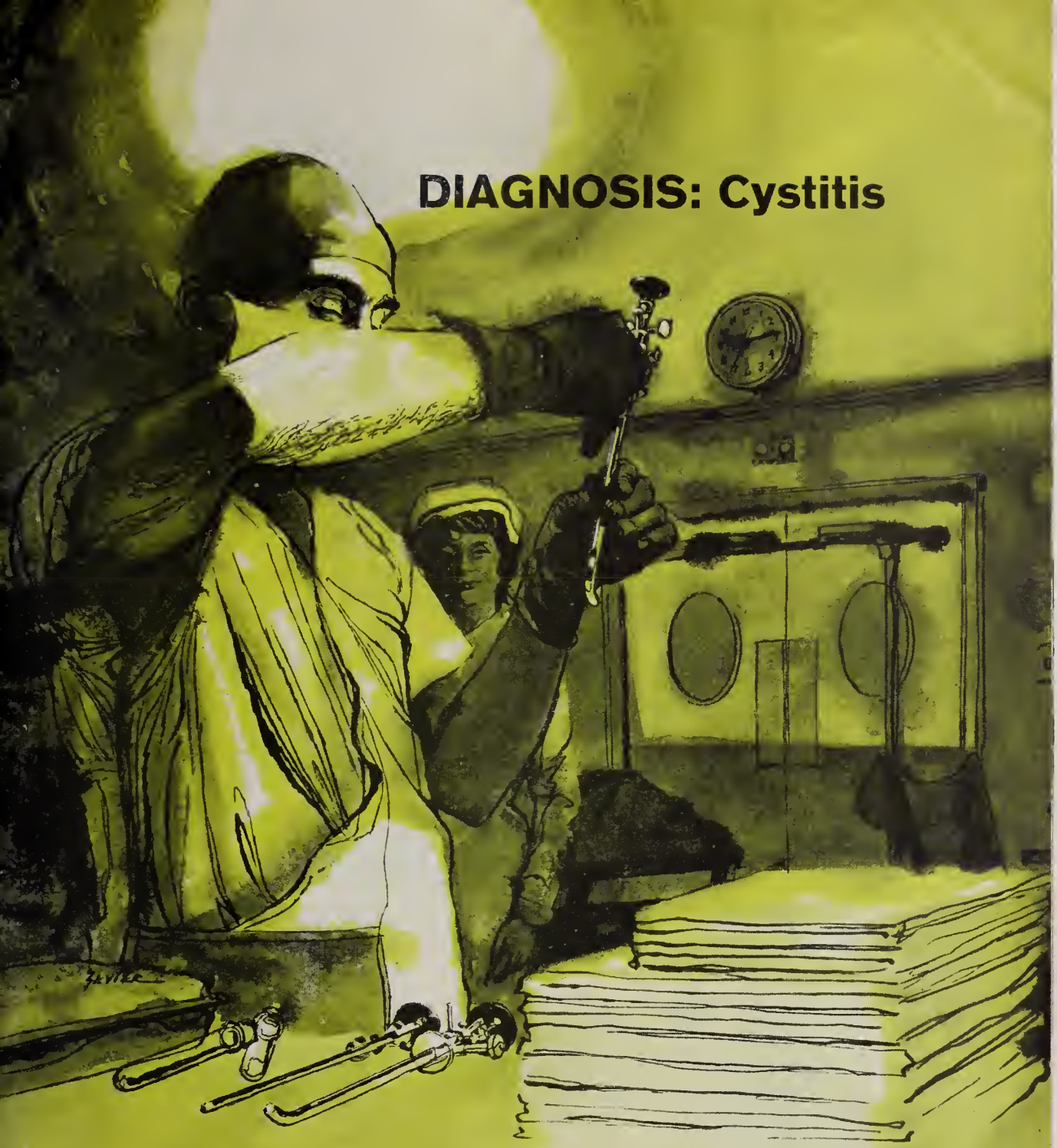
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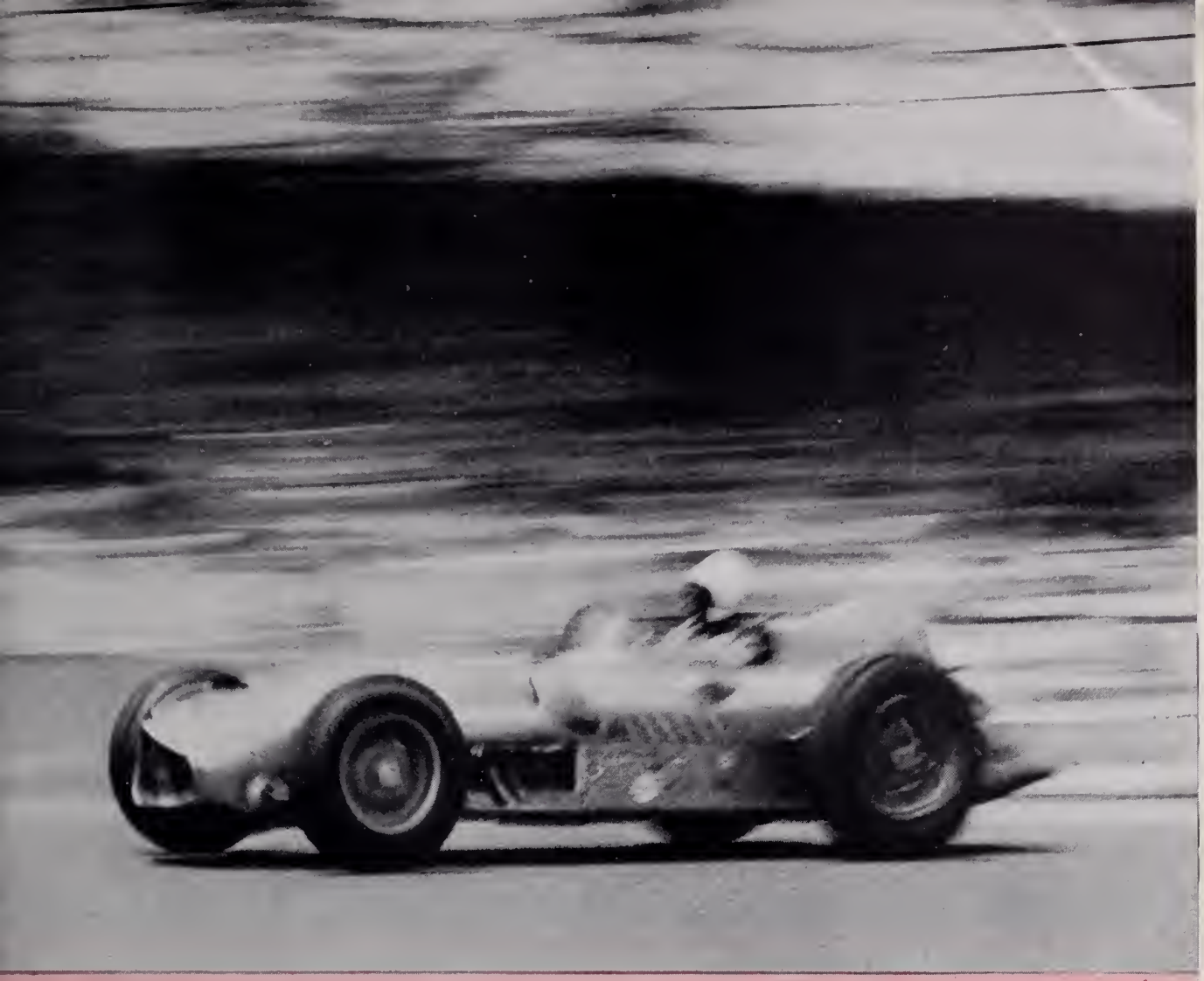
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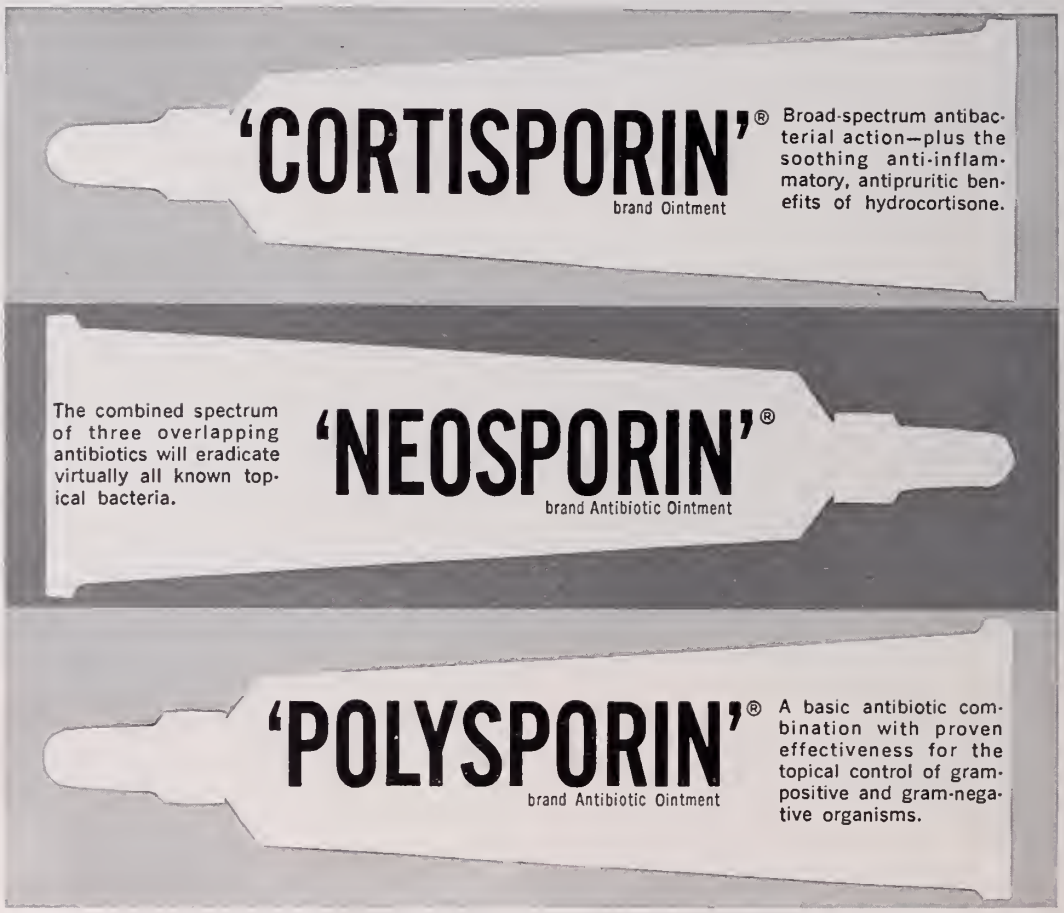
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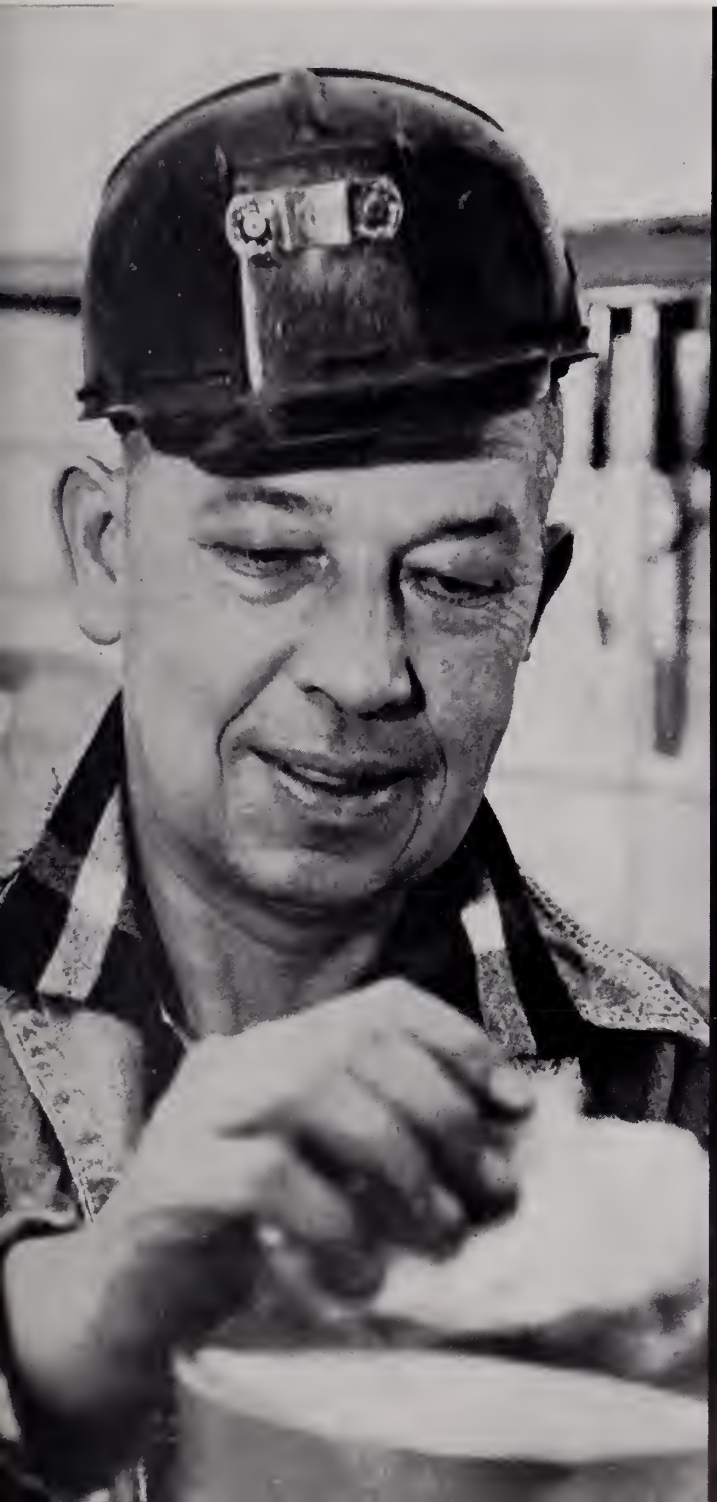
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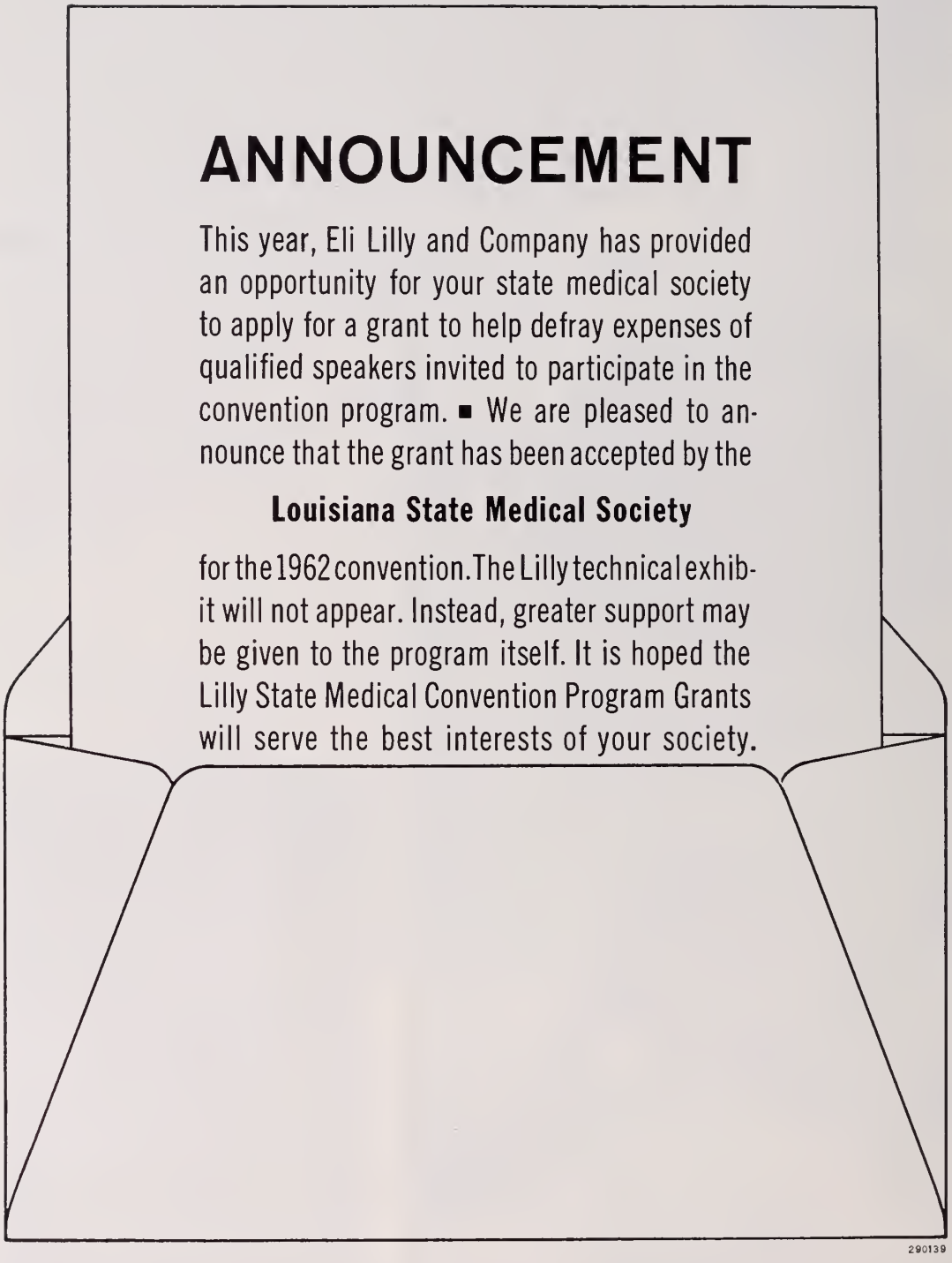
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Pyogenic Liver Abscess*

• A Review of Records from Charity Hospital of Louisiana, New Orleans from January 1, 1950 to December 31, 1959, which furnished 136 cases of amebic abscess of which 85 were pyogenic.

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PAT HUNTER, M.D.
J. D. RIVES, M.D.
New Orleans

ACCORDING to Hippocrates,[1] "When abscess of the liver is treated by cautery or incision, if the pus which is discharged be pure and white, the patient recovers; but if it resembles the lees of oil as it flows, they die." Although we may disagree with his prognosis, we must honor him as the instigator of the search for understanding of the problems associated with liver abscess.

Many important contributions have emerged from the voluminous literature written since the time of that great pioneer. Particularly valuable are the contributions of the last quarter to half a century which have given us a rational approach to the concept of liver abscess. However, despite the ready availability and broad (if not always wise) usage of the "wonder drugs", improved diagnostic and therapeutic techniques, liver abscess remains a dreaded complication and a real challenge to the medical profession.

In a review of the records from Charity Hospital for the period beginning on January 1, 1950, and ending on December 31, 1959, we found 136 cases of liver abscess. There were 85 pyogenic abscess cases and 51 of the amebic variety in our series (Table 1).

TABLE 1
PYOGENIC ABSCESS OF THE LIVER
CHARITY HOSPITAL

Period covered	1950 through 1959
Total number of cases	85
Infants	20
Adults (19-83 yrs.)	65
Men	46
Women	39
Negroes	53
White	32

We were astounded to find that, in this era of antibiotics and refined bacteriological analysis, the pyogenic abscesses far outnumbered the amebic abscesses of the liver. It is the 85 cases of pyogenic liver abscess with which we are concerned in this discussion. Twenty cases were infants and premature babies. In the other 65 cases, the average age was 48 years. There were 46 men and 39 women. Fifty-three were Negroes and 32 were of the white race, revealing that, contrary to

* Presented before the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, 1961, New Orleans.

From Department of Surgery, L.S.U. School of Medicine.

some previous reports, the sexes and races were equally susceptible.

We have divided the etiology of pyogenic abscesses of the liver into four categories (Table 2).

TABLE 2
ETIOLOGY OF PYOGENIC ABSCESSES

I. Portal Spread—8+
  A. Umbilical infection—? (prematures)
  B. Diverticulitis—5
  C. Peritonitis—2
  D. Appendicitis—1
II. Systemic Sepsis—38+
  A. Prematures—?
  B. Primary source suspected—28
  C. Primary source unsuspected—10
III. Ascending Biliary Infection—10
  A. Obstructive jaundice
    1. Common duct stones— 5
    2. Carcinoma—4
  B. Cholecystoduodenal fistula
IV. Other—9
  A. Trauma—3
  B. Extension from adjacent process—3
  C. Cirrhosis—3

Portal Spread

In this category we have included all cases in which the infection reached the liver through the portal venous system. There were 8 cases which could be definitely classified in addition to an undetermined number of the infant cases. Five cases resulted from diverticulitis, 2 from peritonitis of unknown origin and only 1 from appendicitis.

It was impossible, from the records (all autopsies) to determine how many of the infants developed liver abscess as a result of umbilical infection.

Appendicitis has repeatedly been reported in the literature as one of the most frequent antecedent lesions in pyogenic abscess.[10] There was only 1 case in our series in which appendicitis could be implicated. It is interesting, however, that diverticulitis was responsible in 5 cases. In 4, the sigmoid colon was the site of diverticular inflammation and in 1 cecal diverticulitis was the cause. Peritonitis was responsible in two instances, but no source of origin was recorded in either case.

Systemic Sepsis

Blood borne infection transported to liver through the hepatic arteries may produce liver abscess. There were 38 adult cases plus an undetermined number of infant cases in this group. The 38 cases, which could be definitely classified, make up 40 per cent of our series. The primary focus of infection was suspected in 28 of the cases (18 cases of pneumonia, 2 soft tissue abscesses, 3 peri-renal abscesses and 5 ear, nose or throat infections. These, however, were merely guesses. In 10 cases, no guess could be made as to the primary site of infection.

Ascending Biliary Infection

Ascending biliary infection represented the second most common etiological mechanism accounting for 10 cases or 11 per cent. Five resulted from common bile duct obstruction due to gall stones,, 4 from obstructive jaundice due to carcinoma of bile duct, head of pancreas or ampulla of Vater. In one case, cholecystoduodenal fistula with cholangitis was responsible.

Additional Sources of Infection

In the fourth category, we have grouped 3 *unrelated etiological mechanisms* which caused 9 cases of pyogenic liver abscess. Three resulted from trauma to the abdomen and or chest, 2 were of the nonpenetrating type of injury and 1 was due to a bullet wound of the right lower chest.

Three cases resulted from direct extension of infection from subhepatic abscesses. In two, the subhepatic inflammation followed gastric resection and in one no mention was made of the possible origin.

Three cases were found at autopsy in patients who had classic cirrhosis of the liver. The mechanism of spread in these cases is obscure.

Although the various pathways by which infection reached the liver can be clearly defined in 27 of our cases, the antecedent or initial infection is obscure in 58. In the 38 adult cases with metastatic liver abscesses and in the 20 infants, only guesses can be made as to the focus of infection.

Because all of the abscesses in the infant group were miliary and scattered throughout the liver, we have arbitrarily placed these cases into two etiological categories. Blood borne infection, reaching the liver through the hepatic arteries must be incriminated as the logical route of spread in most of these cases. However, the umbilicus, in the postnatal period, is a well recognized area for possible infection and must be assumed to be responsible for the development of liver abscesses in some of these baby cases.

There were 20 solitary abscesses in our series, 16 in the right lobe and 4 in the left. Including the premature infants, in which all of the abscesses were miliary, there were 50 cases in which two or more abscesses were found. In 15 cases, the liver abscesses had extended beyond the confines of the liver to cause complications.

Pyogenic liver abscesses produce the green or gray-yellow pus we have seen too often. The principal organisms usually found in liver abscesses of this type are the staphylococcus, streptococcus (aerobic and anaerobic), Eschericia coli, and pseudomonas. However, we are not able in this series to report on the organisms responsible since cultures were not often reported in these cases. In fact, it was unusual to find a culture report. We do believe, however, that cultures and sensitivity studies should religiously be performed in all abscess cases. Concerted effort along these lines will often reveal the organism or organisms responsible for the infection and the antibacterial agent most likely to control it. Cultures should be carried out under aerobic and anearobic conditions.

Clinical Course

In our experience, pyogenic liver abscesses produce a more acute and toxic type of clinical picture than do the amebic.

The most common symptoms are: abdominal pain, pyrexia, chills and profuse sweating, nausea and vomiting, and rapid weight loss. Anorexia, weakness and lethargy are common complaints. Jaundice, diarrhea, melena and coma were presenting complaints less often.

Constant abdominal pain located in upper abdomen or lower chest is generally present. It varied in intensity from dull to excruciating. Radiation of the pain to the right shoulder is observed when the diaphragm is irritated. Pain on deep inspiration is observed when diaphragmatic pleura is involved and abdominal pain in other locations will present if peritoneum becomes involved. Fever may be of the intermittent type or constant with daily spikes to higher levels, but is always present. Chills were present in 87 per cent of our cases. Rapid loss of weight is a striking feature and is almost the rule. Profuse sweating, nausea and vomiting and weakness are common symptoms. Jaundice was present in 15 per cent of the cases and is a grave prognostic sign.

Physical Signs

The most common physical signs are: upper abdominal, lower chest or flank tenderness, hepatomegally, spiking fever, dullness over the right lower chest and abdominal rigidity. Tenderness, and hepatomegally are always present.

The temperature ranged from 95° F. to 107° F. and averaged over 103° in the daily peak. The pulse rate ranged from 96 per minute to 166 per minute and consistently averaged above 105 per minute in the 85 cases. The maximum WBC was 80,702 total cells with 98 per cent polys. The minimum was 3,000 cells and the average was 18,000 total WBC with 85 per cent polys. The hematocrit ranged from 14 to 45 and averaged 34. Liver function tests were not routinely reported, but should be considered essential in all cases of suspected hepatic inflammation.

Roentgen Signs

As in amebic abscess cases, roentgenography is probably one of the most valuable aids in the diagnosis of pyogenic hepatic abscesses. Liver size, elevation and mobility of the diaphragmatic leaves and evidence of pleural effusion should be noted. Remember that a decrease in mo-

bility of an elevated diaphragmatic leaf means liver involvement only, and an immobile, elevated diaphragmatic leaf designates actual phrenic involvement. Barium gastrointestinal studies may be helpful in noting displacement of upper abdominal viscera by the asymmetrically enlarged liver.

Danger of Aspiration

We believe that exploratory percutaneous aspiration for the detection of pus in the liver in suspected pyogenic abscess is a procedure which is fraught with danger and should be condemned. Its greatest danger is the almost certain contamination of uninvolved serous surfaces. Laceration of the liver with consequent bleeding may also occur as the liver moves with respiration against the fixed needle.

Complications

The complications of pyogenic hepatic abscess arise by way of direct extension of infection beyond the confines of the liver or by embolic spread through the blood stream. In 15 out of our cases, there were 22 complications which were due to direct extension of the infection; 10 subphrenic abscesses, 6 empyemas and 6 cases of peritonitis. There were innumerable other complications, some of which probably represented metastatic abscesses and general sepsis arising from the liver abscesses. Many others, however, could in no way be ascribed to the liver abscesses but were sequelae of other diseases.

Our inability to better classify many of these cases into more definite statistical groups is understandable when we consider that in 53 of the 85 cases, liver abscess was unsuspected during life and discovered only at autopsy. In many instances, the liver abscesses were concealed by more clinically obvious but equally as serious pathological entities. In some, the liver abscesses actually played no significant role in the production of the clinical pictures. General sepsis with multiple metastatic abscesses, lupus erythematosus, tuberculosis, uremia, gastrointestinal hemorrhagic states, cerebrovascular accidents, hypertensive and arteriosclerotic heart disease and failure, and malignancies of various cell types were only a few of the associated problems in these cases.

Treatment

Fifty-eight cases were treated by drug therapy and conservative measures only. There were 51 deaths and 7 survivals with this method of therapy.

Two cases were treated by medical measures in combination with percutaneous aspiration with no deaths. We must consider these patients and their physicians most fortunate because this is dangerous practice.

Four were treated by exploration, aspiration and open drainage with no deaths.

Eleven cases were treated by open surgical drainage with 4 deaths and 10 were treated by surgical drainage combined with other surgical procedures. All 10 patients died. These patients were desperately ill at the time of surgery. In all except the case in which ill advised resection of the left lobe of the liver was performed, the additional surgical procedures were imperative. Five tracheostomies, 2 transverse colostomies and 2 cecostomies were done as emergent procedures in addition to draining the abscesses. Of the 85 cases presented, there were only 20 survivors. A mortality rate of 77 per cent overall.

Prophylaxis

Prophylaxis is the ideal method of therapy for pyogenic hepatic abscesses. We can prevent liver abscesses by vigorously treating local infections and by surgically removing those lesions known to be precursors of liver abscess.

In premature and newborn infants, we suggest that even more attention be directed to the umbilicus. The umbilical area after birth is a natural danger area for infection. After ligation of the umbilical cord, the portion distal to the ligature becomes necrotic. The devitalized cord stump is a good culture medium for bacterial growth and the body temperature is optimum for bacterial proliferation.

That part of the hypogastric arteries, called the umbilical arteries, becomes

obliterated in two to five days after birth. The umbilical vein, however, does not in many instances completely obliterate for up to twenty-eight days. The process may further be delayed in premature or cachectic infants.

Delaney,[14] in 1957, reported three cases of pyelonephritis, sepsis and death from oomphalitis. He believed the infection spread to the urinary tract via the obliterated hypogastric arteries. It seems that the more slowly obliterating umbilical vein would more often be the path of spread for infection than would the arteries. Kutsunai,[8] in 1936, reported 2 cases of liver abscess arising from umbilical infection and reviewed 7 cases from the literature. He stated that the umbilicus is the most frequent site of entry for infection in the newborn.

Various studies have indicated that positive pathogenic bacterial cultures of the umbilical area are found in from 16 to 26 per cent of newborn under the so-called aseptic conditions in the hospital delivery and nursery sections.

We suggest that perhaps routine umbilical cultures should be done, and that daily thorough surgical cleansing of the area be carried out. If the cultures are positive, local appropriate antibiotic therapy and, if practical, specific systemic antibiotic therapy be instituted for the proper care of these vulnerable little patients.

Sources of Infection

It is a generally overlooked fact that common duct obstruction can lead to suppuration and liver abscess. Charcot, in 1877, called attention to the importance of ascending biliary infection and Dr. Frank Glenn[7] has repeatedly emphasized the great part infection frequently plays in biliary tract diseases. Kinney and Ferrebee[9] noted that 50 of 263 cases of liver abscess followed common bile duct obstruction.

We, as surgeons, believe that the mere presence of one or more gall stones is an indication for surgery. With early and adequate surgery, liver abscess should not occur in cases of obstructive jaundice or as a consequence of cholecystitis. All fistulous communications between the biliary and gastrointestinal systems should be surgically treated as soon as the diagnosis is evident.

In only one case could appendicitis be blamed for the liver abscess. However, because diverticulitis was responsible in 5 cases of liver abscess in our series, we will re-evaluate our previously more conservative approach to this problem. Perhaps, early resection of the segment or segments of colon containing the diverticuli should be done. At any rate, we do suggest that broad spectrum antibiotic therapy be routinely used in all cases of suspected diverticulitis along with diet therapy and supportive measures.

Liver injury should be assumed in penetrating wounds of the lower chest and upper abdomen and should be suspected in non-penetrating variety of injury. Adequate open drainage is essential in any case of liver injury, after repair of the liver has been accomplished.

Only by intensive appropriate care of the primary infection will we be able to prevent liver abscess formation. Specific drug therapy is essential, but is impossible without knowledge of the organism(s) responsible. Cultures and sensitivity studies should be routine.

Surgical Considerations

For established or suspected pyogenic liver abscess, surgical exploration should be the initial therapy. Discrete abscesses should be openly drained. Exclusion of virgin serous cavities prior to drainage of an abscess is mandatory. If the abscess has not been walled off by preformed adhesions, the area should be surrounded with gauze packs or the tissue about the abscess sutured to the peritoneum.

The most advantageous and direct route should be used for drainage. Perhaps a separate incision will be necessary for the most direct route after locating the abscess(s) through an exploratory wound.

All cases of miliary abscesses which are scattered throughout the liver, are best

treated by massive doses of specific antibiotics, supportive measures and intensive care of the primary lesion.

Summary and Conclusions

We have presented an analysis of 85 cases of pyogenic liver abscess abstracted from the Charity Hospital records and covering the period between January 1950 and January 1960. Pyogenic abscesses of the liver are a difficult and grave problem. It is more often acute in onset, toxic in its course and fatal in outcome than are those of amebic origin. Etiological mechanisms have been mentioned. We thought that the common bile duct obstruction, infant and diverticulitis cases were of particular interest.

Suspicion of the presence of pyogenic liver abscess should lead to early surgical exploration. The routine use of cultures and sensitivity studies will enable us to more specifically treat antecedent infections as well as the dreaded complications. Open surgical drainage is essential in the treatment of discrete liver abscess.

Remember, however, that the preventive medical and surgical measures are the most important elements in the treatment of this catastrophic complication.

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Present indications are that in the sixties our growth will be even more fabulous than it was in the fifties and the forties. In that two-decade period more effective new drugs to prevent, diagnose and treat countless illnesses were discovered than in the entire period of recorded medical history. Do you realize that 80 per cent of the prescriptions now written could not have been prescribed 10 years ago, that 1 and ¼ million Americans are alive today because of new treatments in the past 10 years, and that five years have been added to man's lifespan in the last few decades.—Leonard W. Larson, M. D., President, American Medical Association, to American Association of Medical Assistants.

Prolonged Labor in Private Practice Compared With Average Clinic Reports*

• A thorough analysis of the differences in lengths of labor in private and in clinic patients.

EARL CONWAY SMITH, M. D.
New Orleans

IT is generally conceded that any labor that lasts longer than twenty-four hours is placed in the category of prolonged labor. While I am in accord with the above classification, I believe that there are some individual labors, of less than twenty-four hours, which last only sixteen or eighteen hours and which because of peculiar circumstances or conditions of each case, should be considered prolonged. This is because either satisfactory progress has not been made, or maternal and fetal complications would most likely develop if the case were to be allowed to continue.

Etiology

Primary uterine inertia occurs in approximately 2 per cent of all deliveries, and appears to be one of the most common causes of prolonged labor. It occurs almost exclusively in primigravida near term. The pelvic architecture may be normal or slightly reduced in size. Naturally, a good mechanism of labor is needed to overcome a relative disproportion between the fetus and birth canal. The cause of uterine inertia is not always easy to ascertain. Faulty uterine development, over distention of the uterine muscle due to twins, large babies or hydramnios, reduce the efficiency of uterine activity and thus prolong labor. The importance of fetal position must be considered when it is recognized that the greater percentages are O.A., O.P. and O.T. As would be expected in the cases of poor mechanism with abnormal presentations, labor is most likely to be prolonged. If to this picture is added the abnormal psychological factors that characterize a highly emotional state, then one has the major components of the situation which are most likely to cause a patient to have a prolonged labor.

Incidence of Prolonged Labor

A review of the literature reveals that most reports have analyzed clinic cases from some of our largest institutions and further reveals a range of 2.1 to 6.3 per cent with an average incidence of 4.15 per cent. There have been very few reports analyzing groups of private patients and it is with this category of patients that this report is primarily concerned. This report is based on a study of 1,025 consecutive deliveries in a Specialist Private Practice. While it is realized that this series is small, I believe certain impressions of value can be obtained from the analysis and also from the comparison to average clinic reports.

TABLE 1
INCIDENCE OF PROLONGED LABOR

	Per Cent
24 Cases in Series of 1,025 Consecutive Deliveries	
Private Series	2.30
Clinic Cases Reported	Av. 4.15

A comparison of the incidence in the private series with the average of clinic cases reported, shows a decrease in prolonged labor of 1.85 per cent in the private series. Many factors enter into this difference as will be explained later in comments.

By comparison of the age groups in the private series with the clinic reports, it is seen in Table 2 that 91.6 per cent in the private series were in the bracket

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 8-10, 1961, New Orleans.

TABLE 2
AGE OF PATIENT

Age (Yrs.)	No. Cases Pvt.	Per Cent Pvt.	Av. Per Cent Clinic in These Age Groups
15-19	1	4.2	38.0
20-24	9	37.5	19.0
25-29	13	54.1	19.0
30-34	1	4.2	12.0
Over 35	0	0	
Total	24	100.	

from 20-30 years. While in the clinic cases 57 per cent were in the 15-24 year group with by far the majority in the group 15-19 years. From the studies I have made it would appear that the clinic group marries younger and more are young unwed mothers than in the private series. In the private series all but one were married.

TABLE 3
PARITY

	No. Cases Pvt.	Per Cent Pvt.	Av. Per Cent Clinic
Primipara	19	79.16	80.
Multipara	5	20.83	20.
Total	24	99.99	100.

Table 3 shows that 80 per cent of prolonged labors occur in the primipara and this compares favorably with the clinic average.

TABLE 4
CAUSES OF PROLONGED LABOR

	Cases Pvt.	Per Cent Pvt.	Av. Per Cent Clinic in These Age Groups
Primary Uterine Inertia	11	45.83	54.4
Positional Dystocia	10	41.66	33.9
Ceph. Pelv. Disprop.	2	8.33	9.0
Cervical Dystocia	1	4.16	8.0
Contraction Ring	0		
Tumors	0		
Total	24	99.98	

Table 4 reveals a greater percentage of positional dystocia in the private series and I believe a logical explanation to be that an experienced obstetrician may diagnose a greater number of cases of this disorder than the less experienced intern and resident in the clinic group. Cervical dystocia occurred 50 per cent less in the private series and I believe this to be due to the absence of conization and a better "know-how" in regard to cauterization of the diseased cervix. Many borderline cases will deliver if a good mechanism of labor can be established or with proper assistance.

TABLE 5
PRESENTATION AND POSITION

	Pvt. Cases	Per Cent Pvt. Cases	Av. Per Cent Clinic Cases in These Age Groups
LOA	9	37.5	66.1
ROA	3	12.5	
LOT	2	8.33	10.3
ROT	4	16.66	
LOP	2	8.33	14.0
ROP	4	16.66	
Breech	0		
Face	0		
Total	24	99.98	

Table 5 reveals that the greatest differences are in occiput transverse and occiput posterior positions not with the increase in the private series. I believe the explanation of the difference is in closer observation of the woman in labor and more careful examination by a more experienced obstetrician.

TABLE 6
METHOD OF DELIVERY
1,025 CASES PRIVATE SERIES

	No. Cases	Per Cent Pvt. Cases
Spontaneous	470	45.85
Outlet Forceps	280	27.31
Low Forceps with Rotation	125	12.18
Mid-Forceps with Rotation	22	2.14
Spont. Breech	8	0.78
Assisted Breech	40	3.80
Cesarean Section	80	7.80
Total	1,025	99.86

Table 6 shows an analysis of the entire private series of 1,025 cases. Important is the rather high percentage of outlet forceps and low forceps with rotation. I believe that after the cervix has been com-

pletely dilated and there has been no progress in a reasonable time, say two to three hours, that the patient should be re-examined and terminated by the proper method, thereby preventing the complications of the second stage of labor and also avoiding a prolonged labor.

The incidence of Cesarean Sections 7.8 per cent is admittedly high but this includes repeat sections, previas, known dystocias and referrals.

TABLE 7
METHOD OF DELIVERY—PROLONGED SERIES

	Pvt Cases	Per Cent Pvt. Cases	Per cent Clinic Cases in These Age Groups
Low Forceps	14	58.33	20.9
Low Forceps with Rotation	8	33.33	9.6
Mid-Forceps	2	8.33	8.7
Breech Extraction	0	0	7.0
Cesarean Section	0	0	5.8
Total	24	99.99	

Table 7 reveals again the greater incidence of low forceps and low forceps with rotation in the private series. But here again I believe in reappraisal of the case when cervical dilation is complete and no progress has been made for a reasonable time. When this situation exists, there should be termination of the case.

TABLE 8
AUGMENTATION OF LABOR

	No. Cases	Per cent
Amniotomy	4	16.66
Amniotomy with Pitocin Inf.	20	83.33
Total	24	99.99

Table 8 shows the frequency of the amniotomy followed with pitocin infusion.

TABLE 9
LENGTH OF LABOR—24 CASES

	Pvt. Per Cent	Av. Clinic Per Cent
24-29	95.8	70.5
30-39	4.2	17.0
Total	100.	

Table 9 reveals a remarkable increase in the percentage of deliveries in private patients in the 24-29 hour group compared to the average clinic percentage. This is principally accounted for by stimulation of labor with amniotomy which in turn is followed by pitocin infusion, early application of forceps, rotation and extraction consistent with safe delivery. Fetal weight did not reflect in this series but 7 per cent weighed nine pounds or more.

Comments

When the dangers of prolonged labor are known, with an increase in both maternal and fetal mortality, it behooves every physician to start in the very beginning of pregnancy at the first prenatal visit, to begin laying the foundation to allay the aprehensions that so often exists especially in the primigravida. The management of the pregnancy is outlined. The attitude of the physician in making a complete physical examination, answering all questions, dispelling doubts and fears, will do much to gain the confidence of the patient in the very beginning of pregnancy, and this could very well spell the difference between a labor ending in a few hours or a prolonged labor. This attitude on the part of the physician must be maintained throughout pregnancy and one must be even more attentive during labor and especially the early part or the beginning. Prolonged labor can in most instances, be prevented if the patients who are likely to develop some type of abnormal mechanisms are recognized during pregnancy. These patients are unable to relax during the examinations but the fact of seeing these patients every two weeks during pregnancy, and perhaps every week during the last four to six weeks of pregnancy, will do much to relieve the tension and anxiety. During the last week or two of pregnancy, all the details of labor, the hospital routine, including details of delivery, should be reviewed several times. The patient is advised to call me when she "thinks" she is in labor and not when she knows that she is. By so doing, the initial fear and tension is prevented.

Pelvimetry

I believe in clinical pelvimetry as it permits of an estimation of the fetus and pelvic architecture. This, combined with x-ray pelvimetry will give conclusions that will allow the physician to predict with a fair degree of accuracy, whether or not, the fetus will be born normally through the birth canal, or by Cesarean Section, or if a trial labor will be contemplated. To point out to the patient the exact plan will let her know that the physician has a definite plan for each eventuality, and she is much more willing to accept labor with a feeling that she will be delivered of her baby in a reasonable time and not allowed to progress to twenty-four or thirty-six hours thereby increasing danger to both herself and the baby. If in spite of all possible care, labor does not progress normally, a reappraisal is made within six to eight hours of the onset of labor by making a thorough examination, including re-x-rays if necessary; if it appears that delivery can be accomplished via the birth canal, a good opportunity is given to accomplish this. Labor is usually augmented with rupture of the amnion when the cervix is dilated to permit the procedure.

Use of Pitocin

Very often sodium luminal, two grains by hypodermic is given shortly after admission to the hospital. If contractions do not assume normal character within one to two hours after rupture of the amnion, pitocin infusion is begun and this usually brings about efficient contractions with a satisfactory effacement and dilatation of cervix. If the presenting parts should retard progress by failing to rotate spontaneously, this is accomplished after cervical dilatation is complete by either manual or forceps. I use a forceps of my own design in a single application to rotate and deliver the fetus; this shortens the second stage of labor in many cases for a period which might be minutes or hours and does little or no damage to the fetus or mother when used properly.

Cesarean Section

If there has been no progress after six to eight hours of good labor, a reappraisal is made and usually a Cesarean Section is performed. Cesarean Sections are not performed to prevent prolonged labor per se, but rather to terminate a labor that would otherwise be difficult and complicated. My corrected Cesarean Section rate is approximately 3 per cent. Postpartal hemorrhage and uterine atony are increased by the use of the pitocin infusion. In this series of cases the incidence was 6 per cent. For this reason one must be on the alert and allow the infusion to continue not only throughout labor, but for at least one hour after the delivery has been completed. In using the pitocin infusion early in labor, during the first six to eight hours, the effect is much greater and thereby shortens the total time until delivery has been completed. The administration of one ampule of ergotrate after delivery of the placenta, will in most instances, prevent post-partal hemorrhage. Because these patients were delivered in twenty-four to twenty-nine hours, dehydration has not been a serious problem, but I do not hesitate to give intravenous fluids when needed.

Additional Observations

The patient seldom reaches the exhausted stage and therefore, very little sedation is required. Two or perhaps three injections of demerol, 50 to 75 mg., given at three to six hour intervals is sufficient. Atropine sulphate gr. 1/200 is usually added to the last hypo of demerol prior to delivery. For the same reason it is seldom necessary to administer antibiotics, and this is a blessing, as the by-effects of these drugs are well known. Gas anesthesia, or pudendal block, or both, or saddle block with forceps delivery, has proved the most suitable of anesthetics in this series. Due to the management of these cases in this manner, I have had no need to perform an extra-peritoneal Cesarean Section, Duhrssen's incisions or even manual dilatation of the cervix. Delayed descent of the breech may be respon-

sible for prolongation of labor and even fetal death. But if there is no descent of the breech within a two hour period after the cervix has become completely dilated, decomposition and extraction is performed.

The patient is observed after delivery as long as necessary to make certain that the uterus remains firmly contracted, the bleeding controlled, and blood pressure and pulse are normal. Early ambulation is the rule and the duration of hospitalization is an average of four days. Most of the infants are normal and the mortality rate is not increased by this procedure. Infection and anoxia, the major factors causing fetal death in prolonged labors, are therefore, avoided.

Summary and Conclusions

1. The incidence of prolonged labor in this series was 2.30 per cent compared with the average clinic report of 4.15 per cent.

2. The age incidence in the average clinic group is less than in the private group.

3. Diagnosis of positional dystocia occurs more frequently in the private series. Cervical dystocia is more frequent in the clinic groups.

4. Proper appraisal of feto-pelvic relationship in the last two weeks of pregnancy and again in labor when progress is not satisfactory, will avoid many prolonged labors.

5. With the augmentation of selected cases of labor with amniotomy and pitocin infusion, and correction of positional dystocia, most cases of prolonged labor can be terminated successfully in twenty-four to twenty-nine hours, or even less time.

6. The fetal and maternal morbidity and mortality were irrelevant in this series.

7. Proper prenatal instruction cannot be over-emphasized.

8. Prolonged labors should be managed in a well equipped hospital.

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U. S. Leads in Medical Sciences

Never before in the 999 centuries of man's previous existence on earth has the standard of medical care been higher. Never before have we had the skills and the tools to cope with disease more effectively. Never before has progress in the health sciences come more rapidly. Whether or not we are ahead of Russia or the rest of the world in science generally, I am not qualified to judge. But I can say without fear of contradiction that we lead the world in the medical sciences, the invention of new and better drugs, and the provision made for the physical and mental well-being of our American people.—Theodore G. Klumpp, M. D., President, Winthrop Laboratories, to Massachusetts Medical Society.

Untoward Reactions Observed in 10,000 Consecutive Excretory Urographies*

• A review of reactions noted in the performance of this examination. The iodides are the cause of reactions which range from minor to fatal especially in an allergic patient.

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EXCRETORY urography is widely accepted as an important procedure in the diagnosis of many medical problems. Indeed, it has become one of the most common special examinations used in radiologic and urologic practice. Its only substantial disadvantage is the occurrence of untoward reactions to the various iodides employed as contrast mediums. Occasionally, reactions are severe enough to be fatal. The frequency of minor reactions and the importance of severe ones prompted analysis of 10,000 consecutive excretory urographies performed from April 1956 to April 1961, at the Ochsner Clinic and Ochsner Foundation Hospital. Most patients were white adults, but there were a number of children and some Negroes. The contrast medium was 50 per cent Hypaque®. Most injections were performed by a specially trained "intravenous nurse" in the Department of Radiology. A physician, as well as at least one x-ray technician, was always in the immediate vicinity in case of a reaction.

Selection of Patients

The referring physician must be cognizant of the slight hazard associated with intravenous injection of the iodide that is necessary for excretory urography. A simple roentgenogram of the kidneys, ureters and bladder gives such information as the size and location of the kidneys, and the presence of opaque urinary stones. If urography is required, it is important that the patient have sufficient renal function to make excretion of the iodide likely. Excretory urography is rarely successful if the blood urea nitrogen level is 40 mg. per cent or higher.

Reactions are much more common in persons with a personal or family history of allergy.[1, 2] Therefore, the physician should question the patient about previous attacks of asthma, hay fever, rash induced by food, excessive sneezing, hives, reaction to drugs, and reaction to previous urography, as well as a family history of allergy. Patients with a history of any of these should not have urography unless the need is pressing. In the allergic individual, extra caution should be exercised. Concomitant use of antihistamine therapy or epinephrine may deserve consideration. As an added precaution, an intravenous drip may be started and the opaque medium introduced into the tube above the needle,[3] or through a three-way stop-cock. Hospitalization has been recommended for definitely allergic patients to enable adequate preparation for emergency care.

Prevention of Reactions

Although helpful, exclusion of known allergic individuals does not prevent occurrence of reactions. Another approach that has gained some favor is preliminary use of an antihistaminic agent.[4-6] Bena-

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dryl® or Chlor-Trimeton®, orally or subcutaneously, has been advocated. We are now studying use of these antihistamines in a large series of patients.

Basic studies on the underlying nature of these reactions are needed. Long ago Landsteiner [7] showed that injected, nonantigenic, chemical substances may unite with serum protein in such a way as to induce antibody formation and sensitivity reaction. More recently, Sobin [8] reported that injected iodides may result in capillary changes and aggregation of red blood cells. Low molecular weight Dextran® is reported to prevent these circulatory changes.[9] Future research along these lines seems promising.

General Conduct of Examination

As with any strange examination, the patient is apt to be apprehensive. This feeling can lead to nervousness, nausea, tachycardia, and faintness. Ideally, the referring physician should have explained to the patient the reasons for ordering the examination and in general what the procedure entails.[10] Ideally, also, the radiographic room, should have a pleasant atmosphere, and the personnel should be friendly and competent and their behavior courteous. On the radiographic table, the patient should be made as comfortable as possible. He should be well covered, with a pillow under his head and his arm well supported. A radiolucent mattress may be used.[3] There should be no offhand, rude, or alarming remarks. The syringes, needles, and other medical equipment should be kept as discreetly out of sight as possible. After a suitable vein has been chosen and a sharp needle selected, the medium should be injected with assurance and technical finesse. The patient should be observed carefully for at least thirty minutes after the injection. To prevent undue apprehension, casual, friendly conversation is appropriate, with considerate attention to minor discomforts and complaints. It is important to be on the alert constantly in order to permit treatment of slight reactions and to identify immediately onset of severe reactions. The necessary equipment to combat reactions must be available for immediate use in the same room where the patient is—not in another room.

Preliminary Testing

There has been recurring hope that before urography it would be possible to predict by some type of test the individuals in whom untoward reactions are apt to develop. Conjunctival,[11] intraoral,[12] and intradermal tests [13] have had their proponents, but it is generally agreed that they are of no real value in predicting reactors.[2, 14] The only test that has seemed to have occasional usefulness and that is often employed is the initial intravenous small dose test, by which a small amount of contrast medium is injected intravenously. This may be done on the day before but is usually done immediately before the examination.

Technic

After intravenous injection of 0.1 to 1 cc. of Hypaque®, the patient is closely watched for three to five minutes. If no reaction develops, the rest of the medium (usually 20 to 30 cc.) is slowly introduced during a period of three to five minutes. During injection the patient is carefully observed and the injection is immediately stopped if the patient seems restless, complains of peculiar symptoms, or shows any other change in appearance or respiration. The needle is *not* withdrawn because it provides a site for immediate intravenous therapy if this becomes necessary. The report of a fatality after injection of only one cubic centimeter of medium indicates the importance of alertness from the first moment of the injection.[15] The need for continued alertness after completion of the injection is demonstrated by the reported case of a patient who manifested a serious reaction thirty minutes after completion of the injection.[1]

Reactions

In Table 1 the untoward reactions among 10,000 consecutive urographic examinations are listed according to the degree of severity.

Minor Reactions. If symptoms are mild and transient, the injection may be stopped, and after a brief interval, slowly continued until completion. The commonest symptom in our series was nausea (Table 1), which usually occurred early

TABLE 1
UNTOWARD REACTIONS IN 10,000 CONSECUTIVE UROGRAPHIC EXAMINATIONS

Untoward Reaction	Slight	Moderate	Severe	Total	Per Cent
Nausea	437	155	39	631	6.3
Vomiting	48	78	13	139	1.4
Dermal reaction	65	54	9	128	1.3
Local pain	71	10	0	81	0.8
Faintness	24	23	7	54	0.5
Nasal symptoms	15	8	1	24	0.2
All others	10	13	8	31	0.3

in the examination, after 5 or 6 cc. had been injected. It seems to occur more frequently if the injection is rapid. The patient complains of a "funny feeling" in the stomach, or of being "a little sick" in the stomach. Sometimes the patient manifests this sensation of nausea by being restless, swallowing repeatedly, or appearing uneasy and pale. Injecting the medium more slowly, applying a cold compress to the forehead or throat, reassuring the patient and having him breathe deeply usually allay this sensation of nausea. The examination may then be concluded.

About 20 per cent of nauseated persons vomit. Mild vomiting manifested by regurgitation and repeated swallowing may subside so that the examination may be continued. Persistent or violent nausea makes stopping the injection imperative, especially if there is danger of aspiration of food. Even if the injection is stopped, enough medium may have been introduced to obtain diagnostic urograms. Roentgenograms should be made if as much as 5 cc. has been injected. In 120 of the 139 patients in our series who vomited, the urograms were of diagnostic value.

Dermal reactions comprised the next largest group in our series. In most instances these were mild or moderate. None of the nine severe reactions were exfoliative, hemorrhagic, or serious enough to require hospitalization of the patient. Itching was unusual. The most frequent manifestation was development of urticarial lesions, which generally appeared near the end or after completion of the injection. The patient may notice a few "red bumps on his skin," or the attendant may see urticarial wheals. Sometimes the patient will discover the urticaria while dressing after the examination or even after leaving the office. These reactions seem to be allergic and usually respond favorably to treatment with antihistaminic agents, such as Benadryl® (diphenhydramine hydrochloride) or Chlor-Trimeton® (chlorprophenpyridamine maleate), in oral doses of 50 mg. or intramuscular doses of 10 to 25 mg. One dose usually suffices, but the dose can be repeated if necessary.

Faintness usually disappears without specific treatment. The faint patient must be observed closely, however, for onset of a hypotensive reaction. Less frequent, and in our series of no consequence, were such reactions as numbness of the arm, headache, dizziness, flushing, sneezing and peri-orbital edema.

Severe Reactions. The three main varieties of severe reactions may be categorized as cardiovascular, neurologic and respiratory.[16, 17] Some severe reactions follow prodromal symptoms (restlessness, pallor, tightness in the chest), whereas others seem to strike with unexpected suddenness. If the person injecting the medium is attentive, he is usually aware that all is not well and that the injection should be stopped. Sudden onset of dyspnea, convulsions or collapse is alarming. It requires considerable restraint on the part of the attendant to leave the intravenous needle in the vein so that prompt treatment may be instituted by this route.

In the presence of a severe reaction, the wisdom of the advice of Weigen and Thomas [17] to "prepare today for the reaction tomorrow" becomes apparent. If plans have not been made beforehand, the situation becomes chaotic. If equipment is not immediately at hand, it may not

be possible to get it in time. If the proper drugs are not available, treatment is delayed, perhaps fatally. Not only are the physical preparations important but the personnel must also be familiar with the general psychologic and medical types of reactions that may occur, and must always be ready to cope with an overwhelming reaction.

Treatment of Reactions

It is helpful to realize that, regardless of the type of severe reaction, some fundamental measures can be instituted for immediate treatment. In every patient in whom a reaction develops, there is a basic need to maintain the circulation of oxygenated blood. This can be aided by removal of encumbrances to circulation or respiration, maintenance of an unobstructed airway, administration of oxygen by face mask, and use of a head-down position if the patient is in a state of shock. By pre-arranged preparations, the attendant should obtain immediate assistance. At the first opportunity (usually only a few moments later) the blood pressure and pulse should be recorded. By this time the type of reaction is usually evident. Specific measures may then be instituted as necessary.

Cardiovascular Reactions (Vascular Collapse). Sudden cardiovascular collapse, or shock, is the most frequent type of serious reaction. In our series there were seven patients with severe cardiovascular collapse, which responded to the treatment to be described, with the exception that epinephrine was not used at that time. Treatment should be prompt. Because this reaction seems to be primarily anaphylactic, injection of epinephrine would seem to be the most logical treatment. Use of a vasopressor to maintain elevation of the blood pressure, of intravenous fluids to augment circulatory volume, and of steroid therapy is generally considered proper treatment. Tracheotomy, artificial respiration and cardiac massage are rarely indicated.

Epinephrine Hydrochloride (Adrenalin®). Intramuscular administration of 0.5 cc. of 1:1000 aqueous solution of epinephrine hydrochloride is the most recent recommendation of Hildreth and associates,[16] who have made extensive, continuing studies of these reactions. To hasten absorption, the site of injection may be massaged. If shock is severe enough to prevent absorption, intravenous injection of 0.25 cc. of 1:1000 aqueous solution is recommended. This dose may be repeated in fifteen minutes if necessary.

In the past, there has been concern about use of epinephrine in these patients because ventricular fibrillation may be produced in anoxic conditions. Hildreth and associates [16] believed this to be a less important consideration than the fact that these reactions seem to be primarily allergic, which can be treated most effectively and promptly by epinephrine.

Vasopressors. Immediate Treatment. Intramuscular or intravenous use of a vasopressor is designed to raise the blood pressure without producing cardiac arrhythmia or stimulating the nervous system. Dosage schedules of two of the recommended drugs in this group are: 2 to 5 mg. (0.2 to 0.5 cc. of 1 per cent solution) of phenylephrine hydrochloride (Neosynephrine®) intramuscularly, or 0.2 to 0.5 mg. intravenously; and 2 to 10 mg. (0.2 to 1 cc.) of metaraminol bitartrate (Aramine®) intramuscularly or 2 to 3 mg. intravenously.

More Prolonged Treatment

If the blood pressure is not sustained after initial improvement, intravenous infusion of a vasopressor substance is begun. L-norepinephrine (levarterenol bitartrate, or Levophed®) may be used, 4 to 8 cc. diluted in 500 cc. of a 5 per cent solution of dextrose and water. The rate of administration is determined by the amount required to maintain a satisfactory level of blood pressure. It is potent and its administration must be carefully controlled, usually by intravenous drip technic. Aramine®, 50 mg. in 500 cc. of physiologic saline solution or 5 per cent solution of dextrose and water, may be used instead. It is reported to produce less

venous thrombosis and to have a vasopressor effect that is more easily controlled.[17]

Additional Procedures

Intravenous Fluid. An infusion of 500 cc. of dextrose (5 per cent in distilled water) may be started immediately. This will support the circulatory volume and offer a ready site for intravenous administration of other agents that may be needed.

Antihistaminic drugs are believed to act by preventing access of histamine to the receptor site in the cell. Thus, the response to the histamine is blocked. Their usefulness, therefore, is limited once the reaction has occurred. It may be postulated that they could help if the reaction is not yet complete. If epinephrine is not used, it would seem reasonable to give intramuscularly or intravenously an antihistiminic agent, as Benadryl® (25 to 50 mg.) or Chlor-Trimeton® (25 to 50 mg.).

Steroid Therapy. Although of little value in the immediate treatment of reactions, steroids are beneficial in long-term management, because they diminish the tissue response to injury. Hydrocortisone sodium succinate (Solu-cortef®) is given intramuscularly or intravenously in doses of 100 mg.

Respiratory reactions include asthma or pulmonary edema. The most rapid improvement follows intramuscular or subcutaneous injection of 0.2 to 0.5 cc. of 1:1000 cc. of aqueous solution of epinephrine; slower but more prolonged benefit results from the slow intravenous injection of 0.25 to 0.5 Gm. (dissolved in 10 to 20 cc.) of aminophylline over a 5 to 20 minute period and intramuscular or intravenous injection of 100 mg. of hydrocortisone sodium succinate (Solu-cortef®). Meperidine hydrochloride (Demerol® in 50 mg. intravenous injections) is occasionally useful.[17]

Laryngeal edema may be included under respiratory reactions. Whether muscular spasm is associated with the edema is problematic. The most effective treatment seems to be injection of epinephrine. Tracheotomy may be performed if this fails to relieve the laryngeal obstruction.

Neurologic reactions are manifested as generalized convulsions. Prevention of cerebral anoxia is the main consideration. Maintenance of oxygenation and normal blood pressure is of prime importance. If frank convulsions have developed, intravenous injection of a rapid-acting barbiturate, such as amytal sodium (0.25 to 0.5 Gm.) is most desirable.

Allergic reactions. Additional comments may be warranted about reactions that are reasonably severe, but do not fit into the foregoing major categories. They seem to be histamine-like reactions, manifested by flushing, sneezing, itching, urticaria, and wheezing. These may be treated by intravenous or intramuscular injection of epinephrine or intramuscular injection of 10 to 50 mg. of Benadryl®, Phenergan® or Chlor-Trimeton®. It is this type of reaction that preliminary medication with antihistaminics should certainly prevent, if premedication is to have any usefulness at all.

Summary

Since excretory urography is an important and commonly used examination, physicians should be aware of the hazards associated with the intravenous injection of iodide compounds. Among 10,000 consecutive urographic examinations conducted at the Ochsner Clinic and Ochsner Foundation Hospital between April 1956 and April 1961 reactions occurred in 8.53 per cent. The incidence of reactions seemed to be decreased by proper psychologic preparation of the patient for the examination, competent performance of the technical procedure, and careful selection of the patients. Allergic individuals should be given this examination only if considered absolutely essential for proper treatment, and then, every precaution should be exercised during performance of the examination.

Preliminary administration of antihistaminics is of debatable value, although their use seems to be increasing in popularity. They seem to be most effective

when given intramuscularly just before the iodide compound is injected.

The most common minor reactions in our series were nausea, vomiting, dermal reactions, local pain, faintness and nasal irritation. These may usually be controlled by injecting the medium more slowly, ensuring adequate respiration, comforting the patient, and administering symptomatic treatment.

Major reactions demand prompt measures if fatalities are to be prevented. Maintenance of adequate airway, oxygenation, circulation, and blood pressure are the keystones to successful therapy. Cardiovascular collapse seems to be due primarily to anaphylactic shock and responds most readily to early injection of epinephrine, unless cyanosis countermands its use. Vasopressors, intravenous fluid, oxygen, and steroid therapy are valuable in prolonged treatment.

Pulmonary edema should respond to injection of epinephrine or aminophylline. Artificial respiration and tracheotomy may occasionally be life-saving. Generalized convulsions should be treated by intravenous administration of barbiturates. Severe allergic reactions should respond to injection of epinephrine or antihistaminics.

It can never be stressed too much that the onset of severe reactions may be sudden and overwhelming, and that successful treatment demands immediate availability of equipment, drugs, and a physician.

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Pneumonia After Bronchographic Examination With Propyliodone as a Contrast Medium*

• A discussion and case report of pneumonia following bronchographic examination using propyliodone as a contrast medium with suggestions as to prevention.

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BECAUSE of a tendency to form persistent alveolar rests, iodized poppy seed oil has been largely supplanted as a bronchographic contrast medium by media that are rapidly eliminated. One of these newer media is propyliodone, (Dionosil®), in oily or aqueous suspension. After instillation most of the aqueous suspension is removed by cough and expectoration, the remainder is hydrolysed and excreted by the kidneys as a sodium salt. The lungs are usually cleared within two to four days.[1, 2, 3] A suppurative pulmonary infection is an unusual complication of a bronchographic examination.

Case Report

A 30 year old housewife was hospitalized on June 29, 1960. Ten days before, she had coughed up 200 cubic centimeters of bright blood. The hemoptysis had diminished, until there was only occasional expectoration of a blood tinged sputum.

Chest roentgenograms, made on admission, showed hilar calcifications. She had a recurrent cough productive of a mucoid sputum occasionally tinged with dark blood. The physical examination of the chest was negative. Sputum examinations for Myobacterium tuberculosis and a Mantoux tuberculin test, with first test strength PPD., were negative.

After two days treatment with tetracycline and postural drainage, a bronchoscopic examination was performed under local anesthesia. An intratracheal catheter was inserted and bilateral bronchograms were made, using propyliodone in aqueous suspension as the contrast medium. The bronchographic examination, accomplished without difficulty, revealed bronchiectatic dilatation of a right anterior basal branch bronchus and a left medial basal branch bronchus, (Figure 1).



Figure 1. Bronchogram, shows bronchiectatic change in anterior basal branch bronchus.

The following day she had a rigor. Her temperature rose to 101.8 degrees F. (38.8 C), and she complained of pain in the lower right side of the chest. Coarse and fine moist rales were present over the right, lower, lung field, posteriorly. The cough became productive of a copious, bloody, purulent sputum. Microscopic examination of the sputum showed leucocytes, red blood cells, Gram positive bacilli and cocci; a sputum culture grew coagulase positive *Staphylococcus aureus*. Postural drainage was continued and treatment with chloramphenicol, streptomycin, and penicillin begun. Chest roentgenograms, (Figure 2), taken the next day, showed an extensive pneumonic infiltrate in the lower lobe of the right lung and increased markings in the left lower lung field.

Her fever and chest pain subsided; the cough, and bloody, purulent sputum diminished. After two weeks of antibiotic treatment the pneumonia resolved. Thereafter, cultures of material, obtained at bronchoscopy, grew typical *Myobacterium tuberculosis* and chemotherapy was started.

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Figure 2. Roentgenogram, shows pneumonia of the lower lobe of the right lung.

Comment

In this patient, the pneumonia following the bronchographic examination resulted from the spread of an existing bronchial infection. Occlusion of the smaller bronchi and bronchioles, by the suspensoid material of the contrast medium, impaired the drainage of the infected region. This together with irritation caused by contact of the contrast medium with the mucosa produced an inflammatory reaction. It is also possible that infected material was carried into the bronchiectatic area from the upper respiratory tract.

The instillation of propyliodone has been followed by chest pain, not of a pleural nature, slight fever, muscular and joint discomfort and transient pneumonitis.[4] Don [5] reported the secondary infection of a recently closed tuberculous tension cavity and attributed this to bronchial occlusion following a bronchographic examination. An existing bronchial infection may be spread by a mixture of mucopus from the infected site with the solution of the contrast medium, that gravitates, or spills over into previously healthy regions.[6, 7]

Aqueous suspensions of bronchographic contrast media are more irritating to the bronchial mucosa than oily preparations. Severe paroxysms of coughing are apt to accompany their use, and they are more effectively eliminated by this means.[8, 9] Mucous secretion, ciliary and smooth muscle activity also clear the smaller bronchi and bronchioles.[10]

Obstruction of the smaller bronchi and inflammatory reactions can be avoided by rapid elimination of the contrast material. Postural drainage, gentle coughing and suction are generally effective. The Trendelenberg position aids drainage into the trachea and larger bronchi where the contrast medium is readily coughed out. Active pulmonary infection or hemorrhage make it advisable to defer bronchographic examination.

Summary

Bronchographic examination, with an aqueous suspension of propyliodone as the contrast medium, resulted in extensive pneumonia. These reactions can often be avoided by deferring examination in the presence of infection and by facilitating elimination of the contrast medium from the bronchial tree.

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Diabetes as an Added Problem In Medical and Surgical Practice*

• A description of a method established for the systematic care of hospital patients having diabetes. The emphasis is upon the problem of providing sustaining care while associated medical and surgical conditions receive attention.

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THE additional problem presented by diabetes in medical and surgical practice will depend upon the severity of the associated disease, the current state of diabetic control, and the coordinated efforts of the medical and surgical staff. This discussion is based on impressions gained in the diagnostic and therapeutic management of 2000 patients with diabetes mellitus admitted to the Ochsner Clinic during the past thirteen years. These patients had the medical and surgical conditions that are usually encountered in nondiabetics admitted to a general hospital. The complications or syndromes specifically related to diabetes will be excluded from this discussion.

In recent years, management of the cooperative patient with diabetes has become less of a problem than formerly because of the discovery of newer and better types of insulin, more effective antibiotics and more widespread use of effective oral hypoglycemic agents. Likewise, a better understanding of metabolic disturbances and biochemical alterations associated with complicating diseases has lessened the difficulties formerly encountered in the management of the diabetic patient. Also, today, the diabetic is in a better state of general health and nutrition than formerly because of an effective patient-education program, improved health standards and better economy. For these reasons, most diabetics can now be easily managed during complicating illnesses, and the risk is little, if any, greater than in nondiabetics. At our institution we believe that the diabetic is best treated by an organized diabetic team whose responsibility is to manage all diabetics on all medical and surgical services in close cooperation with other medical and surgical consultants.

No inflexible set of rules can be applied to the care of diabetics having intercurrent diseases or surgical procedures, since each patient presents individual problems related to diabetes as well as to the associated condition, either of which may influence the course of the other. However, in addition to mature clinical judgment in the general management of these problems, judicious use of a "flexible routine" (Table 1) by the "diabetic team" will result in the most effective combined management of diabetic patients.

In order to apply the "flexible routine" properly, we attempt to categorize every diabetic as soon as possible after admission into one of three groups. This serves as a basic guide line in anticipation of future management. Our 2000 patients were almost equally distributed among the three groups. Approximately 50 per cent of patients in each group had mild diabetes.

Group I

These patients are usually diabetics of long standing, whose disease is well controlled by diet, insulin, oral administration of hypoglycemic agents, or any combination of these, and who are under careful observation of their referring physician

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TABLE 1
FLEXIBLE ROUTINE

1. Fasting blood sugar
2. Serial blood sugars
   a. Fasting
   b. Three hours after breakfast
   c. Three and one-half hours after noon meal
3. Nonfasting blood sugar
   a. On admission
   b. Two to three hours after meals
   c. Ad libitum
4. Glucose screen (modified glucose tolerance test)
   a. Fasting blood sugar followed by:
   b. 100 Gm. glucose orally—then
   c. Blood sugar determination two and one-half hours later
   d. Two and one-half hour urine collection for glucose determination
5. Standard glucose tolerance test
6. Electrolyte screen (Na, K, Cl, CO_2)
7. Diabetic urines (fresh urine test for glucose and acetone before meals and at bedtime).
8. Glucose coverage (amount of regular insulin combined with each 50 Gm. dextrose given intravenously).
9. Sliding scale (amount of regular insulin given depends on glycosuria revealed by "diabetic urines").

at the time of onset of the associated disease. For this reason, the problems of management are minimal, whether the complicating disease be an acute infection, trauma, chronic illness or a surgical disease.

The "flexible routine" can be easily applied to this group. "Serial blood sugar" determinations are obtained on the day of admission along with "diabetic urine;" these provide a base line of the diabetic state under the complicating circumstances. Nutrition is maintained with the usual diet and insulin. If the diabetes is intensified, regular insulin is given on the "sliding scale" schedule, depending on the extent of glycosuria as evidenced by "diabetic urines." Should the "electrolyte screen" indicate dehydration or electrolyte disturbance, infusions of fluids and electrolytes are given, and the "glucose coverage" is started.

In the preparation of this group for elective surgical procedures, usually one to three days is sufficient to obtain diabetic control. In the patients with mild diabetes scheduled for operation the usual daily dose of long-acting insulin is omitted and "glucose coverage" is used during operation and in the immediate postoperative period. The "sliding scale" is usually started at the beginning of the first postoperative day in addition to "glucose coverage." In the moderately severe group having elective operations the procedure is similar; however, one-fourth to one-third of the usual daily dose of long-acting insulin is given the morning of operation. In the severe group one-third to one-half of the usual daily dose may be given. During convalescence, diet and the usual insulin dosage are resumed, and the "sliding scale" is discontinued. After the patient has been on this program for forty-eight hours, "serial blood sugar" determinations are again obtained before the amount of insulin required for discharge is determined.

Group II

These patients' diabetic history, upon admission, is inconclusive, misleading, or even at times unknown. It is in such patients that problems arise necessitating a more energetic approach in establishing the severity of the diabetes and the present state of diabetic control. A nonfasting blood sugar determination is immediately obtained, and the urine is examined for sugar and acetone. If the extent of hyperglycemia and glycosuria is significantly high, an appropriate dose of regular insulin is given on the "sliding scale" basis on a two hour schedule until the degree of glycosuria has been significantly reduced. Routine "diabetic urine" is then done, and the "sliding scale" dose of regular insulin is adjusted so that "serial blood sugar" determinations can be obtained before an optimum dose of long-acting insulin is given.

Patients with mild diabetes may require a glucose tolerance test to establish the severity of the disease, or a nonfasting blood sugar test may suffice.

In patients with moderate or severe diabetes who have a serious complicating disease, more frequent "blood sugars,"

"electrolyte screens" and "diabetic urines" may be necessary in order to apply the "sliding scale," "glucose coverage" and electrolyte replacement effectively. Elective surgical procedures are usually delayed until nutrition is adequate and the diabetes is adequately controlled. As in group I, after the complicating disease has been controlled and diet is resumed, the diabetic state is again reevaluated by means of "serial blood sugars" forty-eight to seventy-two hours after administration of an optimum dose of long-acting insulin has been begun.

Group III

These patients present more problems in diagnosis than in management during as well as after recovery from an associated disease. Most of them have mild diabetes, unknown to them, which is probably only mildly intensified by the complicating disease. Management is no problem when they are placed on the "flexible routine": "diabetic urine," "sliding scale" and "glucose coverage." Management of the few cases in this group classified as moderate or severe is the same as in groups I and II.

Also included in this group is the "potential" diabetic, who, during the associated illness, may have initial mild hyperglycemia which returns to normal after recovery. A "glucose screen" or glucose tolerance test done after recovery frequently provides equivocal information. Dietary restriction usually is all that is needed.

Diabetes with Associated Hepatic Disease

These patients present an additional problem primarily in diagnosis rather than treatment. Hepatogenic diabetes must be differentiated from diabetes with concurrent hepatic disease, and diabetes with secondary hepatic disease. Hepatogenic diabetes should be suspected if the onset follows development of frank hepatic disease in the absence of a family history of diabetes and lack of pertinent laboratory data excluding pancreatic, adrenal and pituitary dysfunction. Likewise, an elevated fasting blood sugar level with objective evidence of hepatic disease and subsequent disappearance of hyperglycemia as hepatic function improves is suggestive of hepatogenic diabetes. Under these circumstances treatment consists of moderately high carbohydrate and protein diet with vitamin supplement. The hyperglycemia and glycosuria can be well controlled with small doses of regular insulin on the "sliding scale" basis or oral administration of hypoglycemic agents until the hepatic disease improves.

The diabetic with secondary hepatic disease resulting from carbohydrate imbalance due to poor diabetic control requires adequate diet and insulin for control of hyperglycemia and hepatic dysfunction. Because these patients manifest varying degrees of resistance to insulin, supplemental regular insulin on the "sliding scale" basis may be necessary in addition to the regular daily dose of long-acting insulin in order to control the hyperglycemia and glycosuria and prevent ketoacidosis.

Acute hepatitis, obstructive biliary disease, or chronic passive congestion associated with heart failure may develop in the known diabetic. Management should consist of adequate diet, and administration of insulin and vitamins until the acute process is altered. Under these circumstances the "sliding scale" and "glucose coverage" can be effectively applied in addition to the usual diabetic program.

Diabetes with Associated Pancreatic Disease

Pancreatic disease intensifies the diabetes in patients with both conditions. In the medical group with acute and chronic relapsing pancreatitis, application of the "flexible routine" in addition to the usual program has proved effective in controlling the diabetes. The diabetic requiring partial or total pancreatectomy needs not only meticulous preoperative diabetic control, but also careful, immediate postoperative observation to control the hyperglycemia. In our experience most diabetics who have had partial pan-

createctomies have only brief, temporary hyperglycemia readily controlled with the added "sliding scale," after which they revert to their preoperative requirements. Those who have had total pancreatectomies, however, become insulin-sensitive and require relatively small amounts of insulin to control the hyperglycemia and glycosuria. Only in one patient in our series who had total pancreatectomy has the insulin requirement increased to more than 40 units in the postoperative period extending up to two years. Most of our patients who had total pancreatectomies were best managed on relatively small doses of long-acting insulin given once daily or on regular insulin in small doses on the "sliding scale" schedule.

Conclusion

In conclusion, among 2000 diabetics managed according to the principles outlined in this discussion, there have been no cases of diabetic coma and no deaths attributed to diabetic complications. There have been, however, some instances of mild insulin reactions, usually in the severe and "brittle" group having a severe medical complication or extensive surgical procedure. Immediate changes in the "flexible routine" overcome recurrences in this area. It has been our experience that this approach has been highly satisfactory in the cooperative management of the diabetic in medical and surgical practice.

Effective Communication

In a poll of the nation's doctors sponsored by the American Medical Association in 1958, 68 percent of the physicians interviewed stated that the detail man was their chief source of product information. Since detail men are also our most costly means of communication, we cannot rely on them entirely. Contrary to what some legislators and others would have the public believe, it is the aim of pharmaceutical companies to spend **as little**, and not **as much**, as possible on the promotion of their products while still maintaining effective communication with the medical profession—T. F. Davies Haines, President, Ciba Pharmaceutical Products Inc., to Association of American Medical Colleges.

Urinary Infections in Children*

• Attention is called in this complete resume to the unsuspected frequency of the condition which ranks second only to respiratory infections in the common infectious diseases in children.

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Introduction

RECENT writers on the subject have emphasized the point that urinary infections rank second only to respiratory infections as the most common infectious diseases in children.[1] As is well known, an incidence of pyelonephritis in adults as high as 10 per cent has been demonstrated in various autopsy series.[2] These two facts lend support to the opinion that many cases of chronic pyelonephritis in adults probably originated during childhood. Thus, the importance of early recognition and adequate treatment of these infections during childhood is evident; for it is at this time that one has the greatest chance of effecting complete cure.

Diagnosis

A. **History:** In clinical practice, any one or more of the following points in the history should immediately arouse suspicion of the existence of urinary infection:

(1) Disturbances of urination, such as, frequency, dysuria, urgency, or incontinence;

(2) Pain, located anywhere in the abdomen, but usually in the suprapubic area or flank regions;

(3) Fever, which may or may not be associated with above symptoms; (It is well to remember that urinary infection should always be suspected in any child with a so-called "fever of undetermined origin.")

(4) And last but not least, malnutrition or retarded growth. The latter is a rather common occurrence in chronic urinary infections in children and may exist without other symptoms pointing to the urinary tract.

B. **Urinalysis:** Suspicion of urinary infection having been aroused by any one or more of the above points in the history the next logical step is to proceed with examination of a urine specimen. It is to be emphasized that this should be a properly collected specimen. One should avoid the not uncommon mistake of making a diagnosis of urinary infection solely on the basis of information derived from an improperly collected urine specimen. In males, the prepuce should be retracted completely and the glans penis cleansed carefully. Only the mid-portion of the stream should be collected for analysis, preferably in a sterile bottle. In females, a routine voided specimen is never acceptable, although it is a widespread practice to diagnose urinary infection in females on the strength of a few pus cells found in such a specimen. One should avoid this error. The female genital area must also be carefully cleansed and only the mid-portion of the stream collected for examination. Obviously, in very small children, it will be impossible to secure the cooperation necessary to obtain a specimen in the above-described manner. Such patients will require catheterization. There has been a growing tendency in some quarters recently to condemn the use of the catheter for collecting specimens.[3] The reasons given for this viewpoint are: (1) Careful bacteriological studies have demonstrated the clean voided specimen to be just as valid as the

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 10, 1961, New Orleans.

catheter specimen for the diagnosis of infection, and; (2) that there is some possibility of producing infection where none previously existed by catheterization. In the latter connection, our own opinion, and that of other urologists [4, 5] is that such a risk is negligible when catheterization is performed with proper attention to aseptic precautions, and is certainly not great enough to contraindicate its use when clinical judgment would indicate the necessity of catheterization for establishing a diagnosis.

Criteria for Diagnosis of Infection

After having properly collected a specimen as described above, what are the criteria in the urinalysis for making a diagnosis of infection? In the past, most clinicians have based the diagnosis almost entirely upon the presence or absence of pus in the urine. In the light of more recent evidence this is probably not correct. As pointed out by Pryles, first of all, "there is no general agreement as to what constitutes pyuria." Campbell, for instance, states that five or more pus cells per low power field in an uncentrifuged specimen is abnormal. Helmholz on the other hand taught that at least six to eight pus cells per low power field in an uncentrifuged specimen was necessary to establish pyuria. Secondly, the presence of pyuria alone does not establish the diagnosis of infection because conditions other than urinary infection can cause pus cells to appear in the urine, such as dehydration, vaginal and rectal contamination, trauma caused by instruments or calculi, chemical irritations, and glomerulonephritis. Finally, the absence of pyuria does not rule out the possibility of infection.[1]

Presently, it would appear that the most important criterion for establishing the diagnosis of urinary infection is the demonstration of bacteria in the urine. The most accurate method of accomplishing this is the urine culture with colony counts. The latter procedure enables one to separate the cases of bacteriuria due only to contamination during the process of collecting or handling from true pathological bacteriuria. A colony count of less than 1,000/cc is indicative only of contamination. A colony count of between 1,000 and 100,000/cc is suspicious of infection and indicates the necessity for repeated studies. More than 100,000 colonies is definitely indicative of infection.[1]

Obviously, not every practitioner will have the rather elaborate bacteriological facilities necessary for performing such studies. In such instances examination of a stained smear of the urinary sediment is a very useful procedure. It has been shown by Pryles and Steg [6] that when the colony count was 100,000 or more, organisms could be demonstrated by Gram stain of the uncentrifuged sediment in 95 per cent of the cases. On the other hand, when the count was 1,000 or less, no organisms were found. This is a procedure which every practitioner should be able to do or have done and will furnish some very valuable information.

Localization of Infection

After the presence of infection has been definitely established, the next point to be settled is the localization of the infection, that is, determination of the portion of the tract involved and most important of all, whether or not the kidney is included.

As a rule, disturbances of voiding along with pain in the suprapubic or genital region points to localization in the lower urinary tract, (urethritis, cystitis). In such instances, fever is usually absent or minimal.

On the other hand, fever, usually with constitutional symptoms indicates infection involving the upper tract or kidneys (pyelonephritis). Disturbances of voiding may or may not be associated. It must be emphasized, however, that such clinical differentiation is not always so simple or clear cut and that it is quite possible for pyelonephritis to exist without the usual classical signs described above. One should, therefore, regard every case of urinary infection as at least a potential pyelonephritis.

Treatment

After the diagnosis of urinary infection has been established in the manner suggested above, the next logical step is to proceed with treatment. Now at this point, a very important question for the pediatrician or general practitioner called upon to manage such problems in children is; "which patients may safely be treated without preliminary urological investigation and which ones should be referred for such study before instituting therapy?"

In the opinion of the authors and in that of most other urologists, the only patients one can safely treat without urological investigation are those with initial infections. Many advise such preliminary investigation in boys with even the initial infection.

The following routine is recommended in treating such initial infections. If at all possible, a specimen should be submitted to the laboratory for culture and sensitivity studies. Information from such a study will be at least forty eight hours forthcoming. Obviously, if one is dealing with an acutely ill child, some therapy must of necessity be instituted before the sensitivity studies are available. In such instances we prefer to use one of the broad spectrum antibiotics at the outset, because they seem to be more rapidly effective in controlling sepsis. After the culture and sensitivity studies are reported, depending upon the information gained therefrom, one either continues the original antibiotic or changes to another therapeutic agent if sensitivity studies indicate that another drug would be more effective. In either event the selected medication is continued for a period of seven to ten days, or until the child appears to be clinically well and a properly collected urine specimen is negative. At this point, it is our practice to then prescribe one of the urinary antiseptics which can be given with safety for a prolonged period. Sulfonamides, furadantin, and mandelamine are admirably suited for this purpose. The child is maintained on one of these drugs usually reducing the dosage, for at least two to three months. Medication should not be discontinued until the urine is negative microscopically and the culture sterile. Careful follow-up study to be sure that the urine remains sterile after discontinuing medication is essential. We are convinced that adequate, long term therapy during the initial episode is the most important safeguard against the possibility of developing latent or chronic pyelonephritis.

Procedure after Recurrence

If, after following the above routine, infection recurs, or if the initial infection persists in spite of such treatment, a complete urological investigation should be conducted. In addition, as previously suggested, one should immediately refer for investigation, all male children even with initial infections and all other children with a history of previous recurrent urinary infections. Such children often have an associated urinary tract obstruction and unless the latter is promptly recognized and corrected all attempts at medical treatment will prove futile and unnecessary damage to the upper urinary tract will be allowed to progress.

Lesions Most Frequently Associated with Resistant or Recurrent Infections

A complete urological investigation in children should include: (1) Bacteriological study of the urine; (2) Examination of the lower urinary tract including estimation of residual urine, cystography, cystoscopy and in special cases, cystometry and uroflometry; and (3) Visualization of the upper urinary tracts by intravenous and/or retrograde pyelography.

After performing such an examination in patients with resistant or recurrent infections one usually encounters one of the obstructive lesions which may occur in any one or more of the following locations:

(1) Infravesical; that is, at the bladder neck or anywhere in the lower tract distal to the bladder neck, such as, (a) meatal stenosis; (b) urethral stricture; (c) posterior urethral valves, or (d) bladder neck contracture;

(2) Ureterovesical; such as ureterocele;

(3) Ureteral; obstruction at this site usually being produced by calculi or by extrinsic pressure; and

(4) Ureteropelvic; calculi, intrinsic strictures and pressure from aberrant blood vessels or fibrous adhesive bands being the more commonly encountered cases of obstruction in this portion of the urinary tract.

At times, one of the other congenital lesions is found. However, quite often some element of obstruction is also associated. Double kidney, duplication of the ureter, ectopic ureter, fused kidney, and malrotated kidney are examples of such lesions.

Occasionally after complete urological investigation as outlined above one may not demonstrate obstruction or any of the congenital abnormalities to explain the resistant or recurrent nature of the infection. However, in females, one will often discover a urethritis which can be a cause for resistant infection. Such patients should receive, in addition to adequate treatment with appropriate antiseptics, urethral dilatation and careful attention to local hygiene to prevent vaginal and rectal contamination.

Finally, in the absence of any of the above findings one is forced to the inescapable conclusion that the child has a true chronic or latent pyelonephritis without any correctable associated obstructive factor or congenital anomaly. Such patients should be treated vigorously not only during the acute episode but for long periods (two to three months) thereafter. A search for any possible source of infection particularly in the upper respiratory tract, is also indicated. Careful follow-up after cessation of treatment to be sure that the urine remains uninfected, is essential.

Summary

The importance of early diagnosis and adequate treatment of urinary infections in children is emphasized. Many feel that this is the most effective way to reduce the incidence of chronic pyelonephritis so commonly observed in adults.

Demonstration of bacteria in the urine is required before one can diagnose urinary infection. The most reliable method for accomplishing this is the urine culture with colony counts. When adequate bacteriological facilities are not available, demonstration of bacteria in the stained smear of the urinary sediment is a simple but very reliable alternate method.

Patients with resistant or recurrent infections should have complete urological investigation before further treatment is given because a urinary tract obstruction or anomaly is often associated. Initial infections or recurrent infections without associated obstruction or congenital anomaly should receive vigorous treatment during the acute episodes and for prolonged periods thereafter. Careful follow-up study to be sure that the urine remains uninfected is essential.

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Editorial

Physical Fitness to Drive an Automobile

There is an urgent national need to reduce the frequency of automobile accidents. The physician's responsibility in this field is a serious one. In recent years accidents consistently have ranked fourth among the leading causes of death. The majority of these are automobile accidents. A reliable estimate for the year 1961 is that there were about 38,000 deaths caused by the automobile and 1,500,000 injuries. Louisiana is in the top ten states in the number of deaths per 100 million vehicle miles with 7 and over. The cause of these accidents and deaths was less than 10 per cent mechanical failure and about 90 per cent driver failure.

It is obvious that the highways should have been made as safe as the necessities of time, money and engineering will allow. It is also clear that the automobile itself should be made as safe as human ingenuity can contrive. In this matter it is obvious that the manufacturers have been reluctant to initiate plans. Even if these two objectives were satisfactorily accomplished, the 90 per cent human failure would remain. The behavior of human beings is the province of the physician. This failure may be considered as psychological and as physical. In the former area emotional instability and its variable effects on human behavior are prominent features.

Accident-proneness is responsible for a much smaller proportion of the total than generally supposed. A recent detailed research showed that less than four per cent of motorists had even one repeat accident in a six year span. The other psychological factors which are predominantly emotional constitute the basis for most accidents. Research, which will lead to an understanding of these factors and present a practical plan for their control, is yet to be done.

A second cause of human failure is that occurring when the individual operates a motor vehicle under the influence of alcohol and other drugs. It is obvious that alcohol is the biggest danger. It is re-

liably stated that in 50 per cent of fatal accidents one driver has more than 0.1 of one per cent alcohol in his blood. It is also reliably stated that driving performance begins to be impaired at a blood level of 0.05 per cent or 50 mgs. 100 ml. of blood. This is equivalent to two ounces of whiskey or two bottles of beer for a person weighing 150 pounds. In addition to alcohol there are six groups of drugs the full effects of which may seriously impair the driver's ability. These are: the pain relievers and sedatives of the opiate, cocaine or barbiturate series. Others are the tranquilizers, antihistamines, motion sickness drugs and the nerve stimulants of the Benzedrine series. The danger in the latter is what may be called their hidden effect. A period of marked stimulation may be suddenly followed by overpowering exhaustion and depression with the possible production of a trance-like state. The sixth group includes streptomycin which may produce sudden nausea, deafness and loss of sense of balance. The patient actually or potentially experiencing the adverse effect of any of these should be warned by his physician of the danger involved.

The third group of conditions which may make an individual unfit to drive are those of organic disease processes including age. This group is the smallest of the three. Even so, organic physical failure in driving is important. It is stated that there are now 84,000,000 individuals with drivers' licenses. It is estimated that five per cent of these are subject to convulsive seizures. The number of drivers past 65 years of age cannot be stated. It is shown, however, by the statistics for the year 1959 that drivers 65 and over were involved in only 5.5 per cent of the fatal accidents of that year while drivers up to 24 years of age were involved in 28.7 per cent similar accidents. It is also stated in one investigation that the accident index for drivers 60-69 years is well below the national safety average while that for those above 70 equals the national average.

Among the organic conditions which would impair an individual's fitness to drive it is seen that almost any disease of any organ, if sufficiently advanced, will interfere with the individual's ability to drive. A committee on Medical Aspects of Automobile Injuries and Deaths of the American Medical Association has prepared "A Medical Guide for Physicians in Determining Fitness to Drive a Motor Vehicle."* This guide takes up in comparative detail the many organic conditions which bear on this problem. It becomes in most instances a matter of judgment of the physician as to whether the condition is sufficiently advanced to impair the patient's ability to drive.

All states have laws under which licenses are issued to drivers. The requirements preliminary to issuing such licenses, the time involved in the examination and the type of examination are subject to wide variation. For instance one state may require that the driver's corrected vision be 20/30 and another may require that it should be 20/70. The writer has been unable to secure the regulations pertaining to the licensure in Louisiana. It is observed, however, that the lay person issuing the license is expected to perceive the manner in which the individual is able to use his arms and legs and to give a test of visual acuity to those over 65.

Two years ago Pennsylvania undertook to require a physical examination of its 5,500,000 drivers. It is estimated that it will take until 1970 to complete the program. During the first year 421,857 new or renewal license applicants were examined. Six hundred and two were rejected. The percentage of rejections was 0.14. The age group which had the greatest proportion of rejections was that of 61-93 in which 0.79 per cent were rejected. In broad outlines the Pennsylvania manual for guiding the examining physicians was similar to the AMA's medical guide referred to above. The result of this program is considered to be good. It was stated that during the nine month period ending March 1961 there were 72 fewer deaths and 8,247 fewer injuries than dur-

* J.A.M.A. 169:1195 (March 14, 1959).

ing a comparable period prior to the operation of the examining law.

However, the legal aspects give rise to much speculation and potential danger to the physician. The danger to the physician lies in two areas. One is the impairment of the doctor-patient relationship and loss of the patients as a result of being denied approval. This apparently is a hazard that the physician must face if the public is to be given the protection which medical science will ultimately be able to afford. The other hazard is more threatening and it consists of a physician's liability for suit based on this rejection and the even greater liability for suit based on charges of negligence after the examinee has had an accident. Such a suit would charge negligence, the presumed effect of which negligence would be the accident. The suit would then serve the double purpose of extracting money from the doctor and absolving the driver of responsibility. The crucial point in such a situation would be—what is negligence? In the decisions of some courts negligence appears to be a failure on the part of the physician to have accurate knowledge of the future. With an extension of the doctrine of responsibility of the physician to foresee sudden organic breakdowns on the part of the driver, the position of the physician would become untenable. If physical examination is to be made a part of the process of licensing drivers, a change in existing laws will have to specifically protect the physician. These considerations indicate that the position of the medical profession in the procession of automobile accidents, that threaten every tenth person, is one of grave responsibility.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF THE PRESIDENT 1961-1962

Another year has ended, another president is about to end his term, and still another president is about to be installed in office.

The regular infusion of new blood is a requisite for keeping any organization strong and healthy. It is the way things should be done in a Democratic country and we must hope and pray we can keep it that way.

The price of liberty and freedom is reckoned in eternal vigilance and with the passing of each new year, we find ourselves working harder than ever before to maintain the necessary vigilance.

Although the past year has had its share of problems and tribulations, it has also been eventful and filled with promise. Some of the problems we have solved, while others will continue to be with us for an indefinite period into the future. Each succeeding president of your Society will find his assignment more difficult as various subversive groups and lay journals continue their vicious and malicious attacks on Medicine and try to turn the profession into their favorite whipping boy.

The job of president of the Louisiana State Medical Society requires considerably more time and attention than one might imagine. I have tried to devote to the task as much of my time as was necessary. In so doing, I enjoyed the cooperation of many fine men and women who gave freely of their time and talents in behalf of the work of the Society. It has been a stimulating experience to work with such people and I shall be forever grateful for their help.

Considerable travel is involved in fulfilling the post of president and I have had my share of time on the road. Among the many important trips made was my attendance at the annual meeting of the American Medical Association in New York, and the clinical meeting of the AMA in Denver. Louisiana was well represented at

both of these gatherings by our regular delegates, our Secretary-Treasurer, and other doctors who participated in the scientific programs.

With Dr. Philip H. Jones I attended the National Legislative Conference in Chicago where we received a detailed briefing on the King-Anderson Bill (HR 4222) and were told what we must do to defeat this highly dangerous legislation.

Each of our eight congressional district committee chairmen has contacted his respective congressman to personally seek his support in opposing HR 4222. All congressmen have formally replied to us and their letters are on file in the office of the Secretary-Treasurer. Some replies were forcefully in our favor while others were non-committal.

I also had the pleasure and privilege of attending the meetings and addressing the members of the various component medical societies. On these occasions we attempted to apprise the members of our problems and progress. We were always cordially received and given one hundred per cent cooperation.

On June 10 of last year, the Executive Committee met and approved participation by the Society in the Civil Defense State Operational Survival Plan. The Committee also voted in favor of participating in the physicians' retirement plan as offered by the National American Bank and the Pan American Life Insurance Company. However, the Internal Revenue Service would not approve this plan so we could proceed no further.

The Executive Committee also voted negatively on a proposed change in the By-Laws which would have eliminated the payment of annual dues by doctors over 70 years of age who have been members of the Society in excess of 25 years. The opinion was that the same end can be accomplished if members will merely apply for active dues exempt membership.

I cannot stress too strongly the vital importance of making the new Kerr-Mills law succeed. I personally met on at least three occasions during the past year with officials of the State Department of Welfare in ironing out various details of this program. There is considerable misunderstanding and controversy over Kerr-Mills and practically all of it is based on ignorance and misinformation. The correct details are simple enough to understand if doctors will merely take the time and effort to study them.

We must understand, first of all, that this is our own program and it is supervised by us. If Kerr-Mills fails to work, there are people in Washington who will give us their own brand of medical assistance to the aged typified by HR 4222, which has consumed so much of our time and attention this past year.

In the general field of public understanding, I am pleased to report that we are making steady progress. The Louisiana State Medical Society was one of the first professional organizations in the State to employ the services of public relations counselors to assist us in navigating through the rocky waters of public opinion. From its modest beginning approximately seven years ago, our public relations program has become an extremely valuable tool which is employed by the Society in a wide variety of projects ranging from getting the side of Medicine with regard to the care of the aged story to the public, to fireworks safety campaigns and fighting chiropractic. I urge that these efforts be continued without restraint in future years.

Along these same lines, I wish to single out for commendation our able and devoted legislative consultant whose services in our behalf continue to be of great value to the profession.

The House of Delegates at the 1960 Annual Meeting approved the recommendation by Dr. W. Robyn Hardy, who was president at the time, calling for the formation of a voluntary group, completely independent and legally separate from the Society, organized for the purpose of political action. Today, we have the new American Medical Political Action Committee which is currently being initiated throughout the Country. We are presently organizing a similar organization on the state level. This group as approved will be a completely voluntary, unincorporated body which is entirely separate and independent of the State Society.

The avowed purpose of AMPAC will be to provide medical doctors, their families and their friends with an opportunity to concentrate their resources and political effectiveness on a local, state and national basis. AMPAC will have strong influence in the election of the proper political candidates at all levels, up to and including national office. Instead of being nonpartisan, AMPAC will "go overboard" in its efforts to be bi-partisan! In other words, it will jump into the political arena with no holds barred. AMPAC will make no secret of its likes and dislikes, and those who incur its disfavor will quickly know about it.

AMPAC was organized because government regulations prohibit corporate groups such as state medical societies and the AMA from becoming involved in political action. I trust that we will receive maximum cooperation from the Society members and from doctors everywhere in getting started with this badly needed organization.

Another new project which I would like to see started during the coming year is the compilation of a directory listing the names of all members of component medical societies in the various parishes. In addition to names and addresses, every doctor would be identified and

catalogued according to his specialty or field of endeavor. The lack of such a directory has made it extremely difficult for us to organize various committees within the State Society and in numerous instances it has resulted in the choice of the wrong man for a certain assignment. To be accurate and effective, the medical directory I propose would be completely revised at five year intervals, with supplements issued annually so we could add the names of new members and list the names of members who are deceased. Changes of address could also be made and the names of members who moved outside the state would be removed from the listing. I am confident you recognize the importance of this suggestion and that you will cooperate at the proper time in providing Society headquarters with the necessary information.

We were honored during the past year with visits from many people including the distinguished Dr. Edward R. Annis who electrified our opening session of the 1961 Annual Meeting with his marvelous address on the subject of medical care for the aged. Dr. Edward Askey, President of the American Medical Association, was another distinguished visitor who called on us.

Great strides were made during the past year in implementing an inter-professional code between the legal and medical professions. As you know, the Society has long been in favor of such a code and I am happy to report that the Louisiana State Bar Association has likewise given their approval to this joint code of cooperation.

We have also devoted considerable attention to encouraging promising high school students to investigate medical careers. During the past year letters were sent to all Louisiana high schools, asking the help of their principals and faculty members in furthering the subject.

I am pleased to report to you that I have noticed an encouraging up-swing in our effort to project the general attitude and image of the Society on a more positive plane. For entirely too many years the medical profession has been accused of being negative. I must admit, with considerable regret, that these accusations have had some basis in fact. But on the other hand, doctors are becoming increasingly cognizant of the importance of being positive. In other words, we have gotten tired of accepting the blame for all of the troubles of mankind and we are now on the offensive. The Kerr-Mills program is one of the best examples of this new and positive approach. I hope there will be many more of them in the months and years ahead.

Another positive project is our medical career program which was undertaken this past year by the Council on Medical Service and Public Relations. The various safety campaigns in connection with the Fourth of July and New Year celebrations are added evidence of this type of positive thinking.

Last year the House of Delegates voted unanimously to honor Dr. E. L. Leckert with a special bronze plaque for his long and diligent service to the cause of professional medicine. In August it was a pleasant duty and honor for me to head a committee composed of Dr. C. Grenes Cole, Dr. H. Ashton Thomas and Dr. Philip H. Jones to present this much merited award to Dr. Leckert. The medical profession lost one of its finest members with the death of Dr. Leckert in January. His work and dedication to Medicine should be an example and a source of inspiration to all of us.

The State Society officers during the past year have encouraged the widest possible support of the American Medical Education and Research Foundation which recently announced its attractive long term loan plan for medical students. This program will be in cooperation with the private banking industry. For every dollar set aside by the Foundation as a guarantee, private banks will lend students $12.50 at a maximum rate of six per cent simple interest.

A professional liability group insurance plan has been under discussion during the past year and we may possibly have a report on the subject during the current meeting of the House of Delegates.

Several months ago the AMA endorsed a private, non-profit health insurance program for the aged, utilizing the Blue Cross—Blue Shield Plans. This would be a voluntary national program in keeping with our precept of freedom of choice of medical care. There is considerable work which remains to be done before the program can become operational, but we are hopeful this can be accomplished in the not too distant future.

The success of the administration of any medical society president can be measured in proportion to the cooperation and assistance he receives from his fellow officers, committee chairmen and members, individual members of the Society and his friends, both within and outside the profession.

The various daily and weekly newspaper, radio and television stations throughout Louisiana were especially generous to us during the past year, devoting thousands of words and countless hours of valuable time and space to various Society-sponsored projects and meetings. Many of these articles received Page One attention and editorial comment. We are grateful to the members of the Fourth Estate for this valued recognition.

As per the wishes of the House of Delegates, an oil portrait of Dr. Cole was commissioned and has now been completed. This portrait of Dr. Cole, which will hang in the Hall of Fame

of the Society, cannot truly express our gratitude or appreciation for all his invaluable services and devotion to the Louisiana State Medical Society. However, we hope it will always remind us of our debt to him.

I wish to express my personal appreciation and thanks to every member of the Society and to the various staff members of the AMA who worked with us during the past year. Included in this group were Dr. W. W. Bauer and Messrs. Aubrey Gates, Tom Hendricks and Harry Hinton.

Mrs. Glenn Scott and her fellow workers of the Woman's Auxiliary turned in a perfectly splendid performance, assisting the Society in ways which are too numerous to detail in this report.

The members of our Executive Committee have been extremely generous and cooperative and I could not have succeeded in any of my work without their help.

Mr. Percy Landry, our legislative consultant, and our public relations counselors, Mr. Paul Perret and Mr. Paul Kalman, played key roles in Society affairs throughout my administration and were always ready and willing to cooperate when their help was needed.

In leaving office, I will sorely miss the ladies who comprise the office staff of the Secretary-Treasurer. Miss Shoemaker, Mrs. Wingo and Mrs. Trahan have been invaluable to me and I am truly grateful for their help.

I have purposely left until last my thanks to Dr. C. Grenes Cole, who besides being my coworker for the past year, is a long time and dear friend. Professional medicine as we know it in Louisiana today is many years ahead of what it might have been with any other man serving as secretary-treasurer. Dr. Cole's distinct knowledge of the profession and of practically everything connected with it in even the most remote way is absolutely astounding. Add to this his wit and sparkling personality and you have the picture of a true elder medical statesman. I cannot find the words to express my gratitude and admiration for this man.

It would require several additional pages for me to list individually the members of the Society to whom I am so deeply indebted for the help they have given me during the period of my administration. I think that no state medical society is more fortunate than we in having so many dedicated men and women in its membership.

Looking ahead, I see a year filled with a considerable number of serious problems which remain unsolved, in addition to some new ones that will be equally serious. However, I feel a tremendous confidence in our ability to surmount these obstacles if we can maintain the same unanimity of purpose which has been displayed in the past.

I would like to close my remarks by stating, with complete humbleness, that I have been honored and privileged to be your president.

Recommendations

1. The Society publish a medical directory listing the names, addresses, specialties or particular areas of practice of every member. This directory to be completely revised and re-published every five years. In addition, a supplement be issued annually to list the names of new members, deceased members, and for the purpose of changing addresses where necessary.
2. The Society give unanimous endorsement to the American Medical Political Action Committee, and urge every member to contribute to the support of this organization.
3. The House of Delegates adopt a resolution condemning the King-Anderson Bill or any similar version thereof and copies of this resolution be sent to every Louisiana Congressman and to every member of the House Ways and Means Committee.
4. The Society continue the valued services of our legislative consultant and our public relations counselors who have performed such valuable work during the past seven years.
5. A special committee be appointed by the president to study and make recommendations on prepaid medical insurance plans.
6. The Society lend its complete support to the American Medical Education and Research Foundation and encourage high school students to investigate medical careers.
7. House of Delegates consider creation of Reference Committees.

CUTHBERT J. BROWN, M. D., President

NATIONAL HOSPITAL WEEK

As automation and technology progress, we frequently feel that machines are taking over and man is fading into the background. But there is still one place where we know we will receive personal attention—the hospital.

Certainly science and technology play a large role in today's hospital, with its cobalt bombs, x-ray machines, electrocardiographs and antibiotics, but they are useless without the doctors, nurses, technicians and other human beings.

In fact, community hospitals have more than two employees for every single patient they admit, and 50 per cent are directly concerned with the professional care of patients.

Scientific progress during the last century has produced unparalleled medical care. Each medical advance has meant better and better care, but this scientific treatment has not—and cannot—replace the very necessary personal attention and care of human beings.

In some cases, the scientific advance has actu-

ally meant that more persons are needed to provide the care—at least more highly trained technicians.

Additionally, patients have specific needs that can be met only by watchful human beings. Machines cannot replace the nurse who notes an alteration in a patient's coloring.

Thus the human factor remains a major one in the provision of hospital care. This week America's hospitals are celebrating National Hospital Week. We would like to salute the scientists and technologists who help produce the advances in medical science and the thousands who work in hospitals—ever watching and ever caring for the patients.

SEE YOUR A.M.A. IN ACTION IN CHICAGO!

Physicians and their wives are invited to tour the Association's headquarters at 535 North Dearborn Street during the week of the A.M.A.'s annual meeting in Chicago.

Located just north of Chicago's Loop, this handsome nine-story newly-remodeled building will be open for your inspection. Special guided tours will be conducted from 9 a.m. to 4 p.m. Monday, June 25 through Friday, June 29.

A corps of well-trained guides will escort you through the building and answer any questions pertaining to A.M.A. publications, projects, services and other activities.

We urge all our members to visit A.M.A. headquarters. You will then realize what the Association is doing for you and how your dues are being spent for your betterment and for the betterment of the medical profession as a whole.

BRIEF SUMMARY OF THE PRESENT STATUS OF SELECTIVE SERVICE AS IT RELATES TO PHYSICIANS

During the calendar year 1961 three Selective Service calls for physicians were issued. This was the first time such calls have been necessary for several years. However, during the past year there was a decrease in volunteers and an increase in the numbers required by the Armed Forces as a result of the mobilization program. This increase in requirement was obtained by:

1. Discontinuing the acceptance of resignation of Regular Officers.
2. Denying release of those Reserve Officers who had voluntarily extended their active duty for an indefinite time.
3. Selective Service call up of 1,025 physicians.
4. Call to active duty of National Guard and Reserve Units with Medical Officers attached.

Because physicians, dentists and other medical specialists, generally speaking, are liable for military service until age 35, and because they may be called as a special group, they were given the following considerations:

1. Those in a Reserve status who were called as filler personnel on or after September 1, 1961 and who had completed at least 21 months previous active duty were given the opportunity to be released shortly after the activation of the unit.
2. Those Reserve Officers on active duty serving only their required two years were released at the end of their tour.

The physicians called up by Selective Service were those in the youngest age group who had completed their internship. This group, therefore included almost exclusively first year residents and physicians just beginning private practice. Since the call was based on age it was not evenly distributed and some hospital training programs suffered a depletion of their first year residents while others were untouched.

Because of the possibility of future Selective Service calls for physicians in time of a crisis it would be well to consider the measures which are available to ameliorate the effect on hospital staffs and civilian communities. These are:

1. **Appeal of classification of 1-A (available for military service) to the Appeal Board.**

Shortly after completion of internship, physicians are normally classified by Selective Service in Class 1-A. An appeal may be made within ten days after receipt of this classification by filing with the local board a written notice of appeal. If the physician is located in an area other than that covered by his local board he may request that his appeal be submitted to the appeal board having jurisdiction over the area where he resides.

2. **Request for determination of essentiality.**

A physician who receives a Selective Service induction notice may, if he is essential to his community or hospital and if his essentiality can be documented, request a determination of such essentiality from his local or State Selective Service Advisory Committee. Copies should be sent to the advisory committee where he is located if this is different from the committee governing the area of the board where the physician is registered. Such a request may also be directed to the National Advisory Committee to the Selective Service System, Washington, D. C.

3. **Delay in reporting to active duty.**

Physicians who have received induction notices and have been commissioned may apply to the Armed Service in which they are commissioned for a delay in reporting to their duty station. Such request must be supported by evidence of essentiality or severe personal hardship.

For those physicians who do not wish to subject themselves to the uncertainties of the draft, the Armed Forces Physicians' Appointment and Residency Consideration Program (Berry Plan)

provides for a reserve commission with entry on active duty at one of the following times:

1. Immediately upon completion of internship.
2. As late as one year following internship.
3. Upon completion of residency training in specialties required by the Armed Forces.

Application may be made for participation in this program early during the intern year. Acceptance into any of the three categories is dependent upon the projected needs of the Armed Services.

(Prepared at the request of the AMA Council on National Security by Eugene V. Jobe, M. D., Medical Liaison Representative, AMA Washington Office, and James E. Fitzgerald, M. D., Member, AMA Council on National Security. April 9, 1962)

KING-ANDERSON LEGISLATION

President Kennedy and proponents of the King-Anderson legislation are exerting every effort and resorting to every scheme at their command to perusade, by coercion, to force Senators and Congressmen to vote for this legislation.

It is extremely essential and urgent that our members write our Senators and Congressmen immediately, requesting their support in defeating this socialized legislation. Send copies of your letters to Congressman Wilbur D. Mills, Chairman of the House Ways and Means Committee.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

W. R. MATHEWS LECTURE

Dr. William Dameshek of Boston will give the fifth annual W. R. Mathews Lecture on June 8, 1962. This will be held at the Confederate Memorial Center, Shreveport, La. in conjunction with the Confederate Memorial Medical Center Alumni Meeting and teaching day. Address inquiries to Dr. E. B. Robinson, Secretary, Bossier Bank Building, Bossier City, La.

HEALTH AND SAFETY TIPS FROM THE AMERICAN MEDICAL ASSOCIATION

The remedies that have been suggested for hiccups are unlimited. Everyone has hiccups now and then, and everyone has had "helpful suggestions" from friends and acquaintances on how to stop them.

Hiccups are spasmodic contractions of the diaphragm. They occur in healthy people spontaneously or from trivial causes. In rare cases hiccups will continue for long periods and control becomes difficult. In these instances, medical attention is required.

Babies often hiccup after rapid feeding, or swallowing of air. Sometimes hiccups are noted along with neurosis and with certain diseases, such as flu.

Today's Health, the magazine of the American Medical Association, offers several suggestions for curing the hiccups—

—In the case of babies, administer sips of warm water; take the child in your arms, patting his back.

—One of the best remedies for simple hiccups in older children and adults is to lie down and relax.

—Other measures that sometimes help: Drink water slowly, trying both warm and cold water if necessary; if an upset stomach sets off the hiccups, take a teasponoful of baking soda in water; breathe in and out into a paper bag, so that the carbon dioxide level in the blood is raised.

The important thing in stopping the hiccups is to relax, and any prudent thing that helps the subject relax and gets his mind off the hiccups may be helpful.

There are occasional cases in medical history of individuals whose hiccups have persisted for hours or days. If hiccups don't go away after a reasonable period, say, an hour or two, call your doctor.

THEME OF THE AMA ANNUAL MEETING TO BE MEDICINE IN THE ATOMIC AGE

"Medicine in the Atomic Age" will be the theme of the scientific program for the 111th Annual meeting of the American Medical Association June 24-28 in Chicago.

Eminent physicians and research scientists from throughout the nation will bring to the medical men in attendance the latest word on developments and findings in research and in therapy in many of the major disease areas confronting the physician in practice.

The eight half-day general scientific meetings are indicative of the broad scope of the scientific program of the annual meeting. General scientific meetings will be presented on Inhalation Therapy; Clinical Cardiology and Anticoagulant Therapy; Diagnostic Problems and Exfoliative Cytologic Methods; Tissue Transplantation; Inflammatory and Ulcerative Diseases of the Small Intestine; Teenagers' Problems; Mental Health, and Nuclear Medicine.

In addition, the Multiple Disciplinary Research Forum, which proved so successful at the New York meeting for the first time last June, will be repeated at the Chicago meeting.

All of the scientific and industrial exhibits and all of the general meetings and meetings of the 21 sections will be held under one roof for the first time. Site of the meeting will be Chicago's giant new auditorium and convention hall, McCormick Place, newly opened on the shore of Lake Michigan a short distance south of the Loop.

McCormick Place is completely air conditioned and is well supplied with restaurants and other facilities to serve the 15,000 to 17,000 physicians expected to register for the meeting.

The general meeting on Inhalation Therapy will be sponsored jointly by the American College of Chest Physicians with Dr. Kenneth K. Keown of the University of Missouri Medical Center, Columbia, serving as coordinating secretary. The participating sections are Anesthesiology; Diseases of the Chest; Pathology and Physiology; General Practice, and General Surgery.

The American Heart Association will be cosponsors of the general meeting on Clinical Cardiology and Anticoagulant Therapy. Drs. Wright R. Adams of Chicago and Samuel P. Martin of the University of Florida School of Medicine at Gainesville are the coordinating secretaries. Participating sections are Internal Medicine; Experimental Medicine and Therapeutics; Diseases of the Chest; Pediatrics; General Practice; Preventive Medicine; Orthopedic Surgery, and Pathology and Physiology.

Coordinating secretaries for the general session on Diagnostic Problems and Exfoliative Cytologic Methods are Drs. Lemuel C. McGee of Wilmington, Del., and G. Gordon McHardy of New Orleans. Participating sections are Preventive Medicine; Gastroenterology and Proctology; Obstetrics and Gynecology; Pathology and Physiology, and General Surgery.

The meeting on Tissue Transplantation is coordinated by Dr. John C. Wilson of Los Angeles. Participating sections are Orthopedic Surgery; Pathology and Physiology; General Surgery; Internal Medicine; Pediatrics, and Experimental Medicine and Therapeutics.

SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association will hold its Annual Meeting November 12-15, 1962 at the Fontainebleau Hotel, Miami Beach. Exhibits of high caliber are solicited for the Scientific Section. Applications may be obtained from the chairman of the Scientific Exhibit Committee, George F. Schmitt, M. D., 30 S. E. 8th Street, Miami, Florida.

WOMAN'S AUXILIARY PLANS 39TH ANNUAL CONVENTION

A special program for all doctors' wives—featuring a report on current affairs in the nation's capital and tips on "guarding your husband's health"—will be presented during the 39th annual convention of the Woman's Auxiliary to the American Medical Association.

More than 2,000 Auxiliary members and other physicians' wives are expected to attend the convention to be held in conjunction with the A.M.A. annual meeting June 24-28 in Chicago. Auxiliary headquarters will be the Hotel Pick-Congress.

The Auxiliary's House of Delegates will convene Monday morning, June 25 and will adjourn Wednesday, June 27. Meetings will be devoted to reports and discussions of Auxiliary activities including civil defense, legislation, community service, health careers, rural health, safety and mental health.

Sen. Everett M. Dirksen of Illinois and a leading medical authority will be featured speakers at special programs for all doctors' wives Tuesday and Wednesday mornings prior to the delegates' sessions.

The annual tea honoring the president, Mrs. Harlan English of Danville, Ill., and the president-elect, Mrs. William G. Thuss of Birming-

ham, Ala., will be held Monday afternoon.

National past presidents of the Auxiliary will be honored at Tuesday's luncheon commemorating the Auxiliary's 40th anniversary. Guest speakers will be Drs. Leonard Larson and George Fister, A.M.A. president and president-elect. The Auxiliary will also announce its annual contribution to the country's medical schools through the American Medical education Foundation at this luncheon.

A postconvention workshop and planning session for 1962-63 national officers and chairmen will be held Thursday morning, June 28. Dr. Ernest B. Howard, A.M.A. assistant executive vice president, will discuss highlights of the A.M.A. House of Delegates meeting.

For the first time, Auxiliary members will have an opportunity to display their original works of art in a special Auxiliary Art Exhibit. Awards will be given in four categories—oils, watercolors, drawings and sculpture.

A full schedule of sightseeing tours, coke parties, swimming parties and other activities will be arranged throughout the week for the teenage members of A.M.A. families.

All Auxiliary members, their guests and guests of physicians attending the A.M.A. annual meeting may participate in the social functions and attend the Auxiliary general meetings.

Local arrangements are under the direction of Mrs. Richard E. Westland, chairman, and Mrs. Joseph A. Cari, vice chairman, both of Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, for the 1963 Part I Examinations are now being accepted. Candidates are urged to make application at the earliest possible date. The deadline date for receipt of applications is **July the first**, 1962.

All applicants and candidates for re-examination are required to submit with their application or letter of request, a **duplicate** list of their hospital dismissals for the preceding twelve months, made up in accordance with the revised format shown on the last page of the current Bulletin.

Current Bulletins outlining present requirements may be obtained by writing to the Secretary's office.

Diplomates of this Board are requested to inform the Office of the Executive Secretary of any change in address.

Robert L. Faulkner, M. D., Executive Secretary and Treasurer, American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, INCORPORATED

The American Medical Women's Association extends an invitation to all women physicians attending the AMA Annual Meeting in Chicago, to be their guests at a brunch on Sunday, June 24, 1962, at 11:00 a.m. at the Essex Inn.

"Medical Woman Power — Can it be Used More Efficiently" will be discussed by a panel with audience participation.

If you will be able to attend, please return the attached coupon before June 22 to:

- -

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1790 Broadway, New York 19, N. Y.
I will accept your invitation to the Brunch on June 24, at the Essex Inn in Chicago, Illinois.

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BOOK REVIEWS

The Out-patient Treatment of Schizophrenia; by S. C. Scher, and H. R. Davis, Grune and Stratton, 1960, 246 p. $5.75.

This book represents the compilation of the papers presented at a recent symposium on schizophrenia at the University of Minnesota, along with the critical comments which sometimes were as extensive as the original papers themselves.

The book might well be considered as a companion volume to an earlier work stemming out of a similar symposium, "Psychotherapy With Schizophrenics", edited by Brody and Redlich (IUP, 1952).

In this more recent work are articles by such authorities as Hoch, Arieti, Wexler, Rado Ackerman, Kanner, Abrahams, Gottlieb and others. For psychiatrists or other physicians interested in getting a good cross-section of the current thinking on the complex behavioral abnormality labeled "schizophrenia", this reviewer would recommend the book. It would not seem to be particularly useful to physicians in other specialties or in general practice who are seeking some forthright book on treatment procedures.

In fact, the title of the book is somewhat misleading, as more of the book concerns discussions dealing with etiology, current research, and attempts to describe the essential features of the disease than it does with actual treatment. Nev-

ertheless, recommendations and inferences concerning treatment are interspersed throughout the book, and the reader probably will find the widely differing points of view, on all subjects discussed, intriguing. It certainly will leave him with a sense of even greater humility than he probably already has regarding the diagnosis and treatment of schizophrenia!

HIRAM G. HAYNIE, JR., M. D.

Cardiovascular Dynamics; by Robert F. Rushmer, 2nd ed. W. B. Saunders Company, 1961. 503 p., $12.50.

This volume is an enlargement of the author's previous book, *Cardiac Diagnosis: A Physiologic Approach.* This new work, *Cardiovascular Dynamics,* fills the need for a book which bridges the gap between physiology and clinical cardiology. Rushmer's presentation is lucid even in areas which are so often obscured by the semantics that poses for knowledge. The reader will particularly appreciate the many illustrations which in most instances are worth more than a thousand words. This book can be highly recommended for student and practitioner alike.

N. P. DEPASQUALE, M. D.

Cutaneous Manifestations of the Benign Inflammatory Reticuloses; by Samuel M. Bluefarb, Charles C Thomas, 1960, 408 p., $14.00.

Dr. Samuel Bluefarb has now completed his enormous task of covering the cutaneous aspects of diseases of the reticuloendothelial system, in this fifth volume of his series. This represents the culmination of twenty years of work, and work of a high level of scholarship and intelligence. It is true that the volumes are of greatest interest to dermatologists; yet the widespread involvement of these disease states makes them of importance to all practitioners of medicine. The present volume, as well as the preceding monographs, are highly recommended.

VINCENT DERBES, M. D.

The Cardiac Arrhythmias; by Brendan Phibbs, M. D., The C. V. Mosby Company, 1961, 128 p. $7.50.

In the preface of this brief text the author stated that the electro-diagnosis of the arrhythmias is simple and accurate. There follows a description of the anatomy and physiology of the conducting system of the heart, and the simple and more complex arrhythmias. It would indeed be nice if the arrhythmias behaved as simply and true to form as the author suggests. Unfortunately, they do not. The book presumably is not written for the cardiologist or even the internist. Not withstanding this fact the book attempts, I feel, to over simplify. Certain illustrations are not accurately labeled. Such statements as "read and reread this section before going any further" insult the reader's intelligence especially when applied to the chapter on the sinus rhythms. The few grammatical errors are unfortunate. The quality of type, paper and binding though is excellent.

In summary for anyone with even a casual acquaintance with the arrhythmias, I would not recommend this book.

L. P. O'MEALLIE, M. D.

A Manual of Cutaneous Medicine; by Donald M. Pillsbury, M. D.; Walter B. Shelley, M. D.; and Albert M. Kligman, M. D. W. B. Saunders Company, 1961. 430 p. $9.50.

The authors of this monograph are outstanding teachers and writers in the field of dermatology. Their combined efforts have produced a text as readable, informative, and enjoyable as their previous one, Dermatology (1956). Moreover, as the authors state in their preface, it is not a précis of their larger work but is entirely new and contemporary.

The goals of the authors set for themselves in writing this book were high and all were adequately attained. Their summary of the principles of anatomy, physiology and biochemistry pertinent to understanding skin disease is concise and clear. The fundamentals of pathologic processes and dermatologic diagnosis are presented in a well organized manner. In simple terminology, the common skin disorders are discussed with respect to diagnosis, etiology, prevention and treatment. There is an abundance of photographs and diagrams which add to the clarity and beauty of this useful text. And as a bonus to the practitioner a comprehensive basic formulary preceeds the index.

A *Manual of Cutaneous Medicine* is highly recommended as a basic dermatologic text.

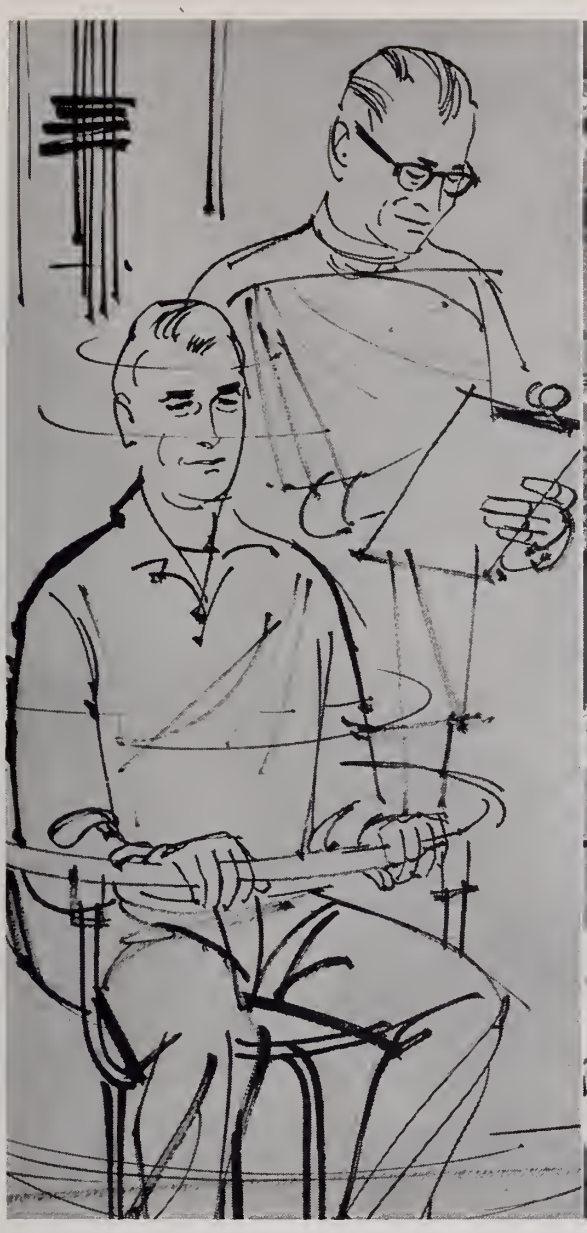
MICHAEL M. SCHREIBER, M. D.

PUBLICATIONS RECEIVED

Dover Publications, Inc., N. Y.: Classics of Cardiology, Volumes I and II, by Frederick A. Willius' M. D. and Thomas E. Keys, A. B.; Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics, by Harold Cummins and Charles Midlo.

The C. V. Mosby Co., St. Louis: Early Detection and Diagnosis of Cancer, by Walter E. O'Donnell, M. D., Emerson Day, M. D., and Louis Venet, M. D.

W. B. Saunders, Phila.: Clinical Pathology: Application and Interpretation (3rd Edit.), by Benjamin B. Wells, M. D.



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1. King, J. C.: Int. Rec. Med. 172:669, 1959. 2. Weiner, L. J., and Bockman, A. A.: Sci. Exhibit, A.M.A., Ann. Meet., New York City, June 26-30, 1961.

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SIDE EFFECTS: Drowsiness may occur in some patients; if so, it is usually transitory, disappearing within a few days of continued therapy or upon reduction of dosage. Dryness of mouth may be encountered at higher doses.

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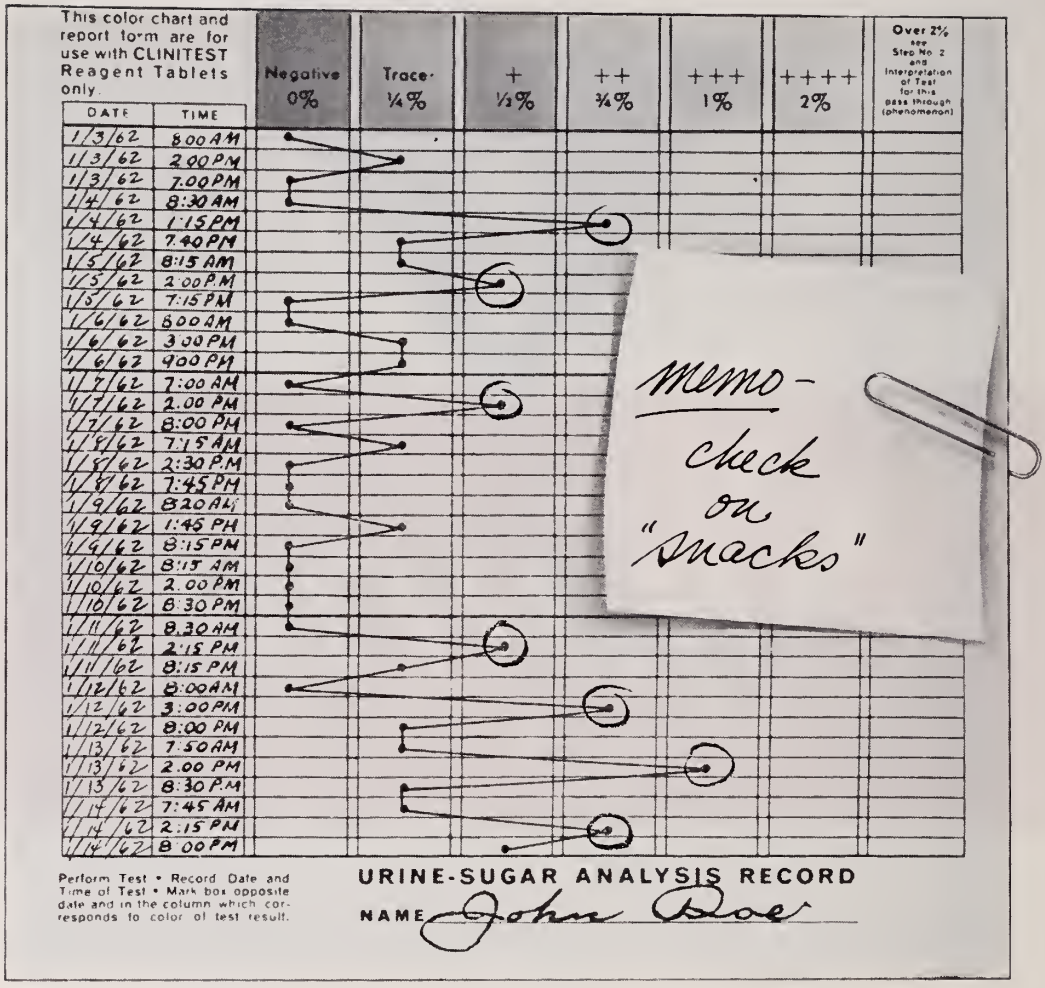
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...for elderly patients with anorexia, asthenia and general debility—
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Fourteen patients, age 66 to 77, treated with Winstrol, usually in a dosage of 6 mg. daily, for various periods in order to correct underweight, weakness and chronic fatigue. Marked improvement occurred in appetite, sense of well-being and strength; almost all patients gained weight.

...for patients with osteoporosis and arthritis—
RELIEF OF PAIN, IMPROVEMENT IN MOBILITY

Twenty-one patients with arthritis treated with Winstrol for pain and limited mobility due to osteoporosis. With few exceptions, dosage was 6 mg. daily; duration of treatment varied from a few weeks to 6 months. In 8 patients relief of symptoms was excellent and in 6 moderate. Of the 7 persons in whom no relief was obtained, 5 had received treatment for less than one month and some had been given doses below 6 mg.

...for patients with malignant disease—
NOTABLE WEIGHT GAINS, INCREASED APPETITE AND SENSE OF WELL-BEING

Twenty-six patients, mostly women, weak, emaciated and seriously ill, were administered Winstrol in dosage of 6 mg. daily for periods extending up to 14 months (average 6.7 months). Notable weight gains occurred. Patients showed increased appetite, alertness and confidence, better appearance, increased mobility and tolerance to pain.

...for patients with chronic, non-malignant disorders—
IMPROVEMENT IN WEIGHT AND GENERAL ACTIVITY, INCREASED SENSE OF WELL-BEING

Eight patients with advanced tuberculosis, bronchopulmonary disease, nephritis and ulcerative colitis treated with 6 mg. of Winstrol daily for from 3 to 4 months. Gains in weight varied from 6 to 27 pounds with increased sense of well-being and improvement in general activity.

...for undernourished, underweight children and adolescents—
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One hundred and twenty children, age 1 to 11 years, underweight and in poor health, were given Winstrol for several months. Majority received daily dosage of from 2 to 4 mg. In nearly all, appetite was improved. Over 70 per cent showed significant gains in weight of from 5 to 17 pounds.

DOSAGE: Usual adult dose, one 2 mg. tablet t.i.d. just before or with meals; children from 6 to 12 years, up to 1 tablet t.i.d.; children under 6 years, ½ tablet b.i.d. Available in bottles of 100 tablets.

Complete bibliography and literature available on request. Before prescribing, consult literature for additional dosage information, possible side effects and contraindications.

*animal data

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Side Effects: Panmycin Phosphate is well tolerated clinically and has a very low order of toxicity comparable to that of the other tetracyclines. Side reactions are infrequent and consist principally of mild nausea and abdominal cramps.

Leukopenia has occurred occasionally in patients receiving novobiocin. Rarely, other blood dyscrasias including anemia, pancytopenia, agranulocytosis and thrombocytopenia have been reported. In a recent report it was observed that three times as many newborn infants receiving novobiocin developed jaundice as control infants. For this reason, administration of novobiocin to newborn and young infants is not recommended, unless indication is extremely urgent because of serious infections not susceptible to other antibacterial agents.

The development of jaundice has also been reported in older individuals receiving Albamycin. Serious liver damage has developed in a few patients, which was more likely related to the underlying disease than to therapy with novobiocin. Although reports such as the above are rare, discontinuance of novobiocin is indicated if jaundice develops. If continued therapy appears essential because of a serious infection due to microorganisms resistant to other antibacterial agents, liver function tests and blood studies should be performed frequently, and therapy with novobiocin stopped if necessary.

In a certain few patients treated with this agent, a yellow pigment has been found in the plasma. The nature of this pigment has not been defined. There is evidence that it may be a metabolic by-product of novobiocin, since it has been reported to be extractable from the plasma (pH 7 to 8.1) with chloroform while bilirubin is not. These properties have been employed to differentiate the yellow pigment due to the metabolic by-product of novobiocin and bilirubin. However, recent reports indicate that this method of differentiation may be unreliable.

Urticaria and maculopapular dermatitis have been reported in a significant percentage of patients treated with Albamycin. Upon discontinuance of the drug, these skin reactions rapidly disappeared.

Warning: Since Albamycin possesses a significant index of sensitization, appropriate precautions should be taken in administering the drug. If allergic reactions develop during treatment and are not readily controlled by antihistaminic agents, use of the product should be discontinued.

Total and differential blood cell counts should be made routinely during the administration of Albamycin. If new infections appear during therapy, appropriate measures should be taken; constant observation of the patient is essential. If a yellow pigment appears in the plasma, administration of the drug should be continued only in urgent cases, and the patient's condition closely followed by frequent liver function tests. In case of the development of liver dysfunction, therapy with this agent should be stopped.

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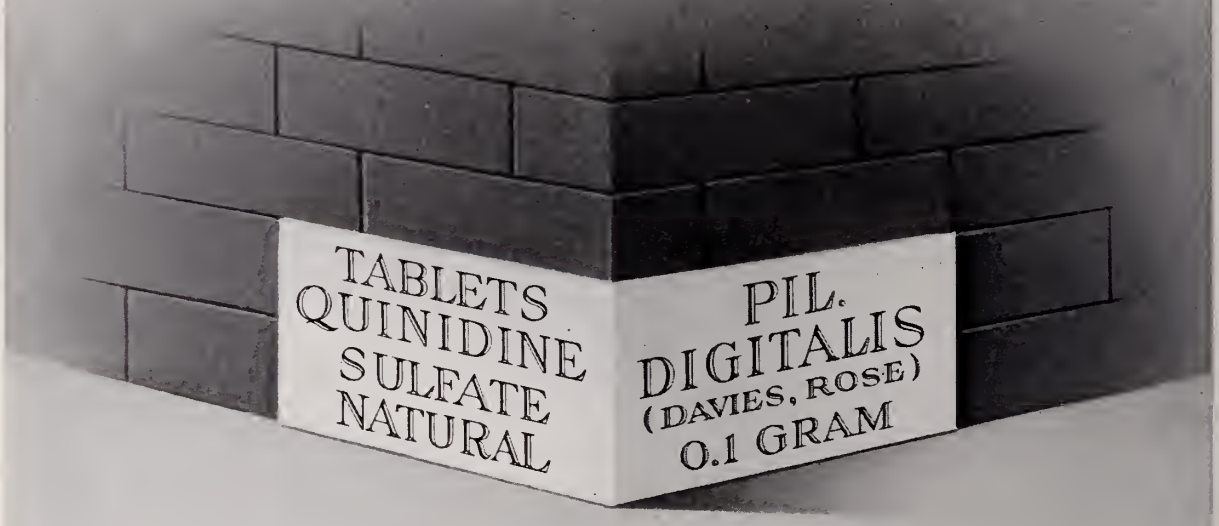
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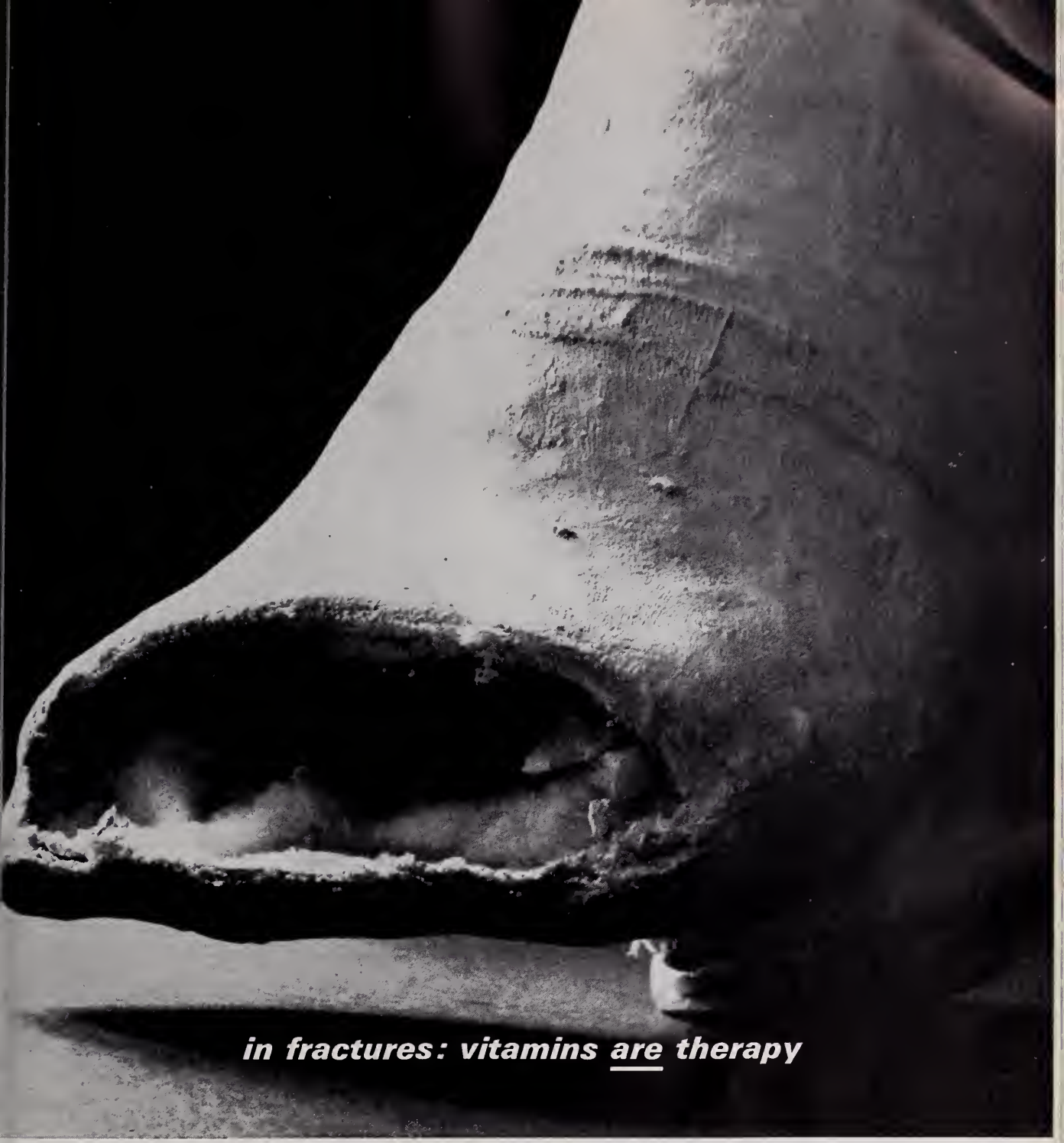
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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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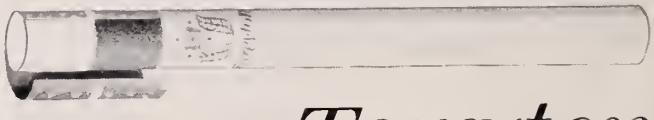
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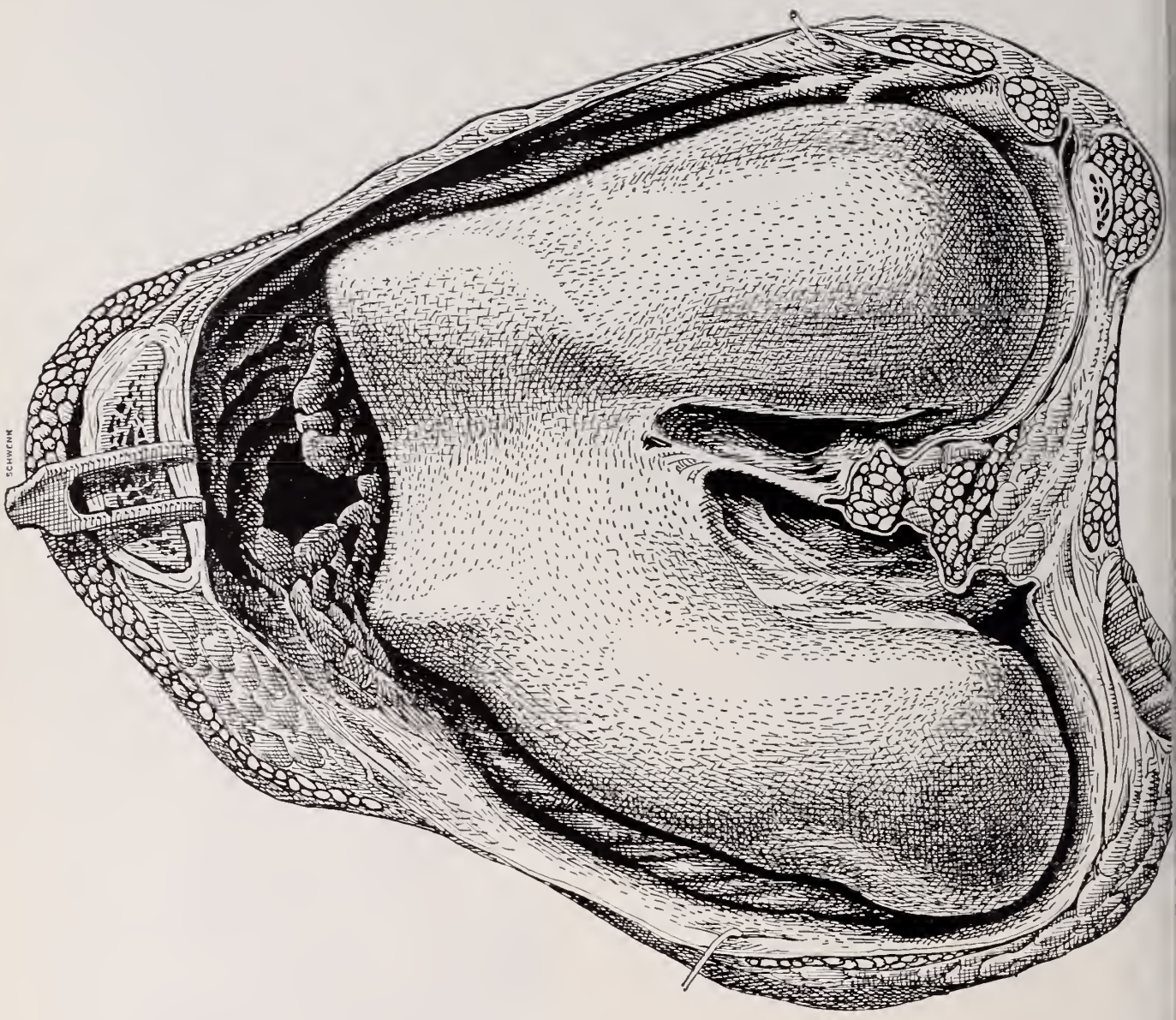
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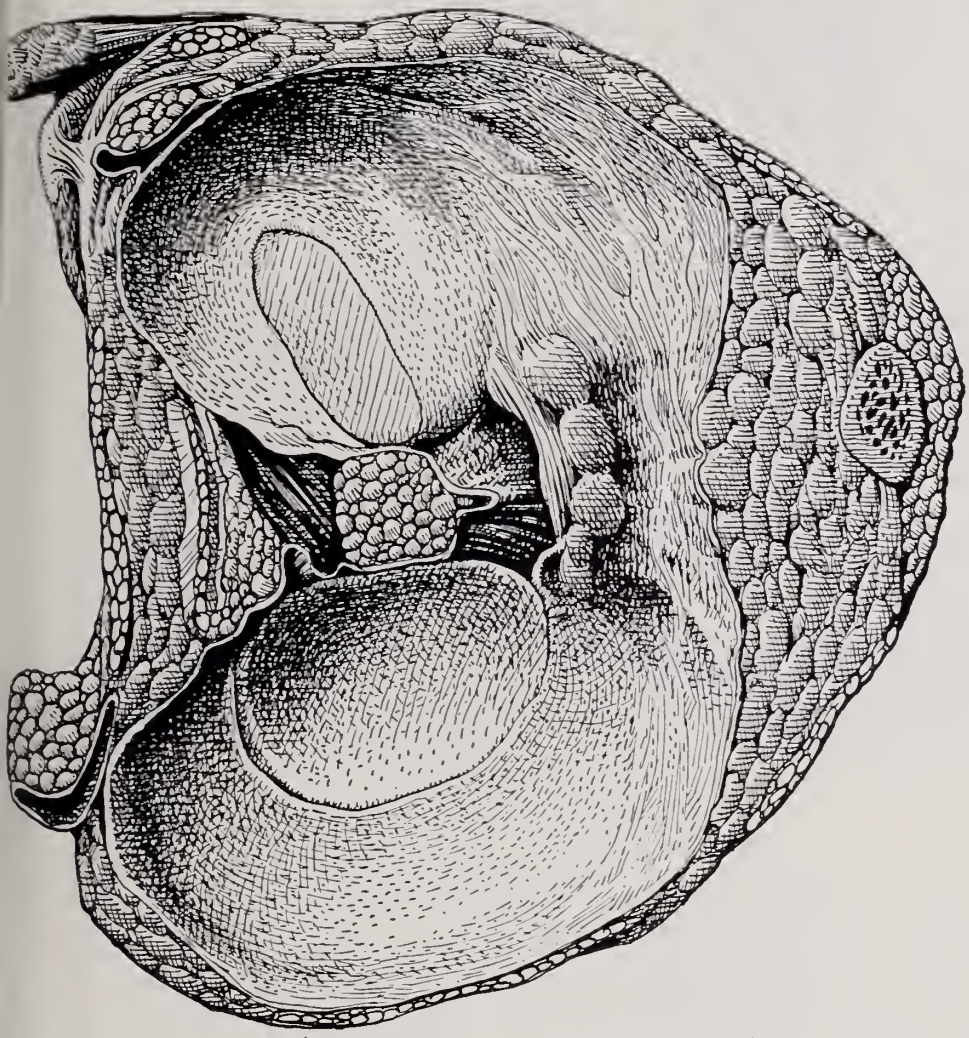
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References: 1. DeNyse, D. L.: M. Times *87*:1512 (Nov.) 1959.
2. Gruenberg, F.: Current Therap. Res. *2*:1 (Jan.) 1960.

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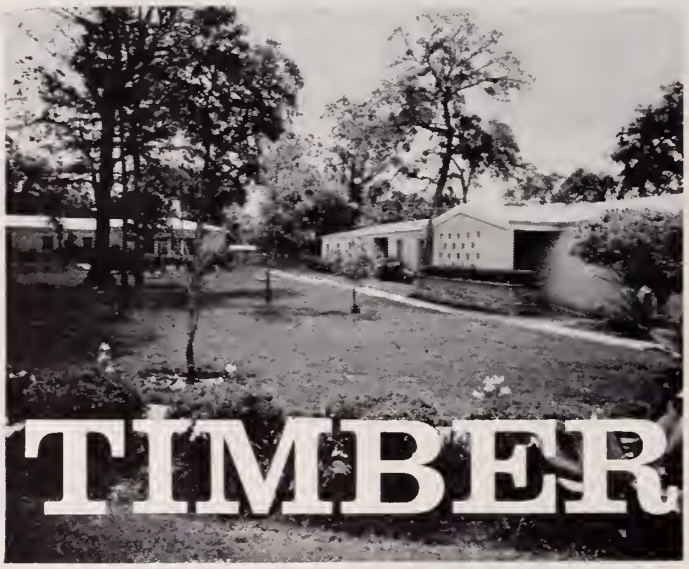
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1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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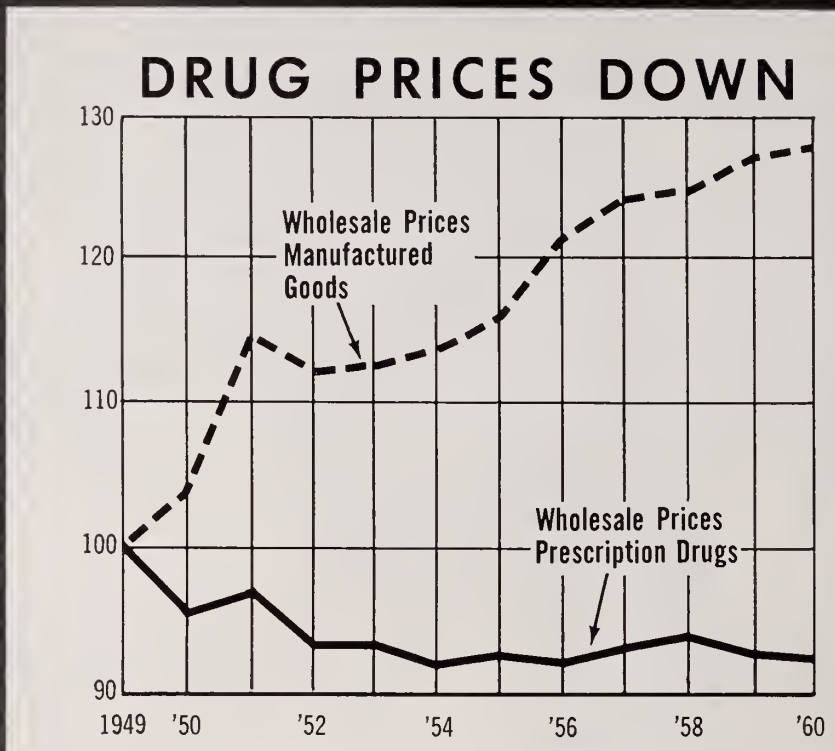
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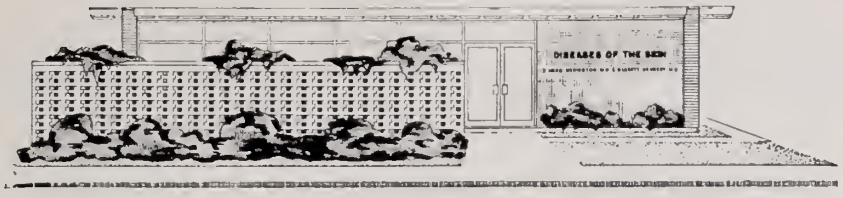
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2. Launching by the American Cancer Society of its first nationwide public education campaign out of which was to come a broad program of education, research and service through voluntary support, and

WHEREAS, the American Cancer Society was a major supporter of the National Cancer Institute Act and subsequently supported development and growth of the National Cancer Institute, and

WHEREAS, the National Cancer Institute and the American Cancer Society have demonstrated the need for complementary efforts by the people, on a voluntary basis, and the government, in the attack on this grave disease, and

WHEREAS, the fight against cancer has made remarkable progress since 1937 in the research laboratory, the hospital, the doctor's office, and the public's attitude; therefore

RESOLVED, that the American Cancer Society join with the National Cancer Institute in celebrating twenty-five years of the attack against cancer during the year 1962, which shall be called Cancer Progress Year, and further

RESOLVED, that the purpose of this Cancer Progress Year be to report to the public on where science now stands in cancer research, to intensify the efforts being made to persuade the public to act for its own protection, to improve the care of the cancer patient, and to step up all programs to speed the final victory over cancer.

NOTE: The above resolution was adopted by the ACS Board of Directors meeting in Seattle, June 8, 1961.

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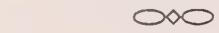
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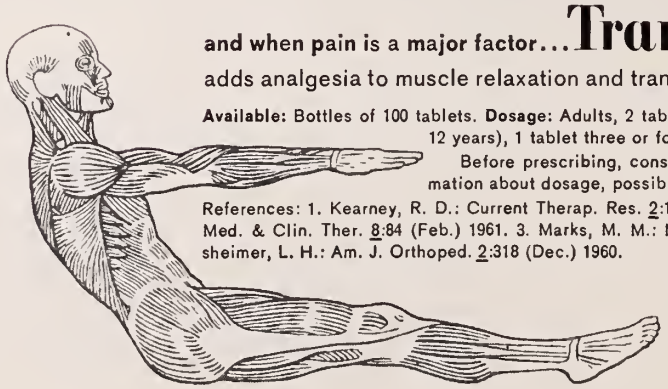
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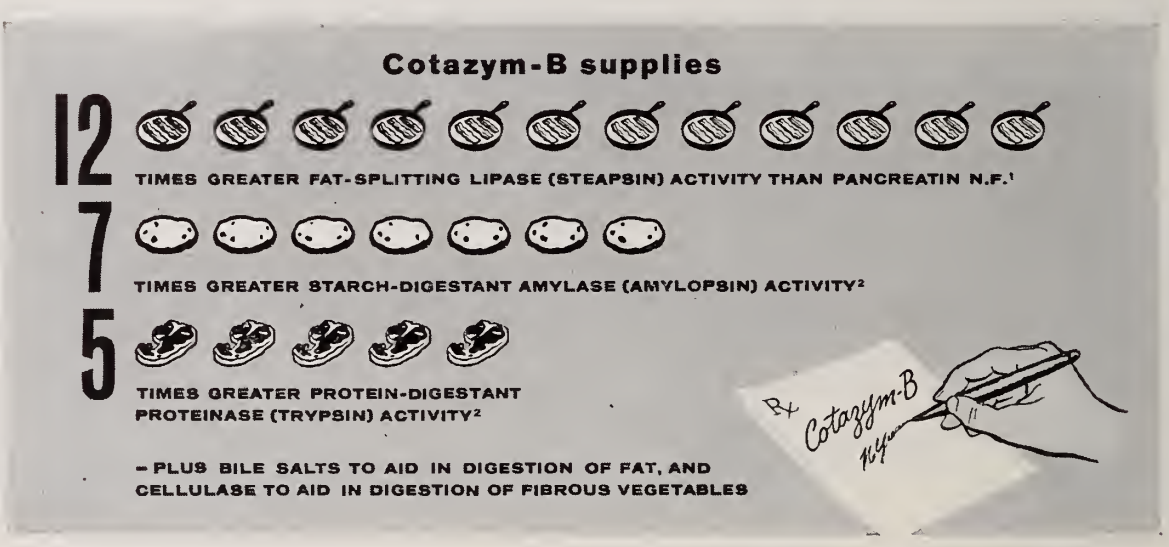
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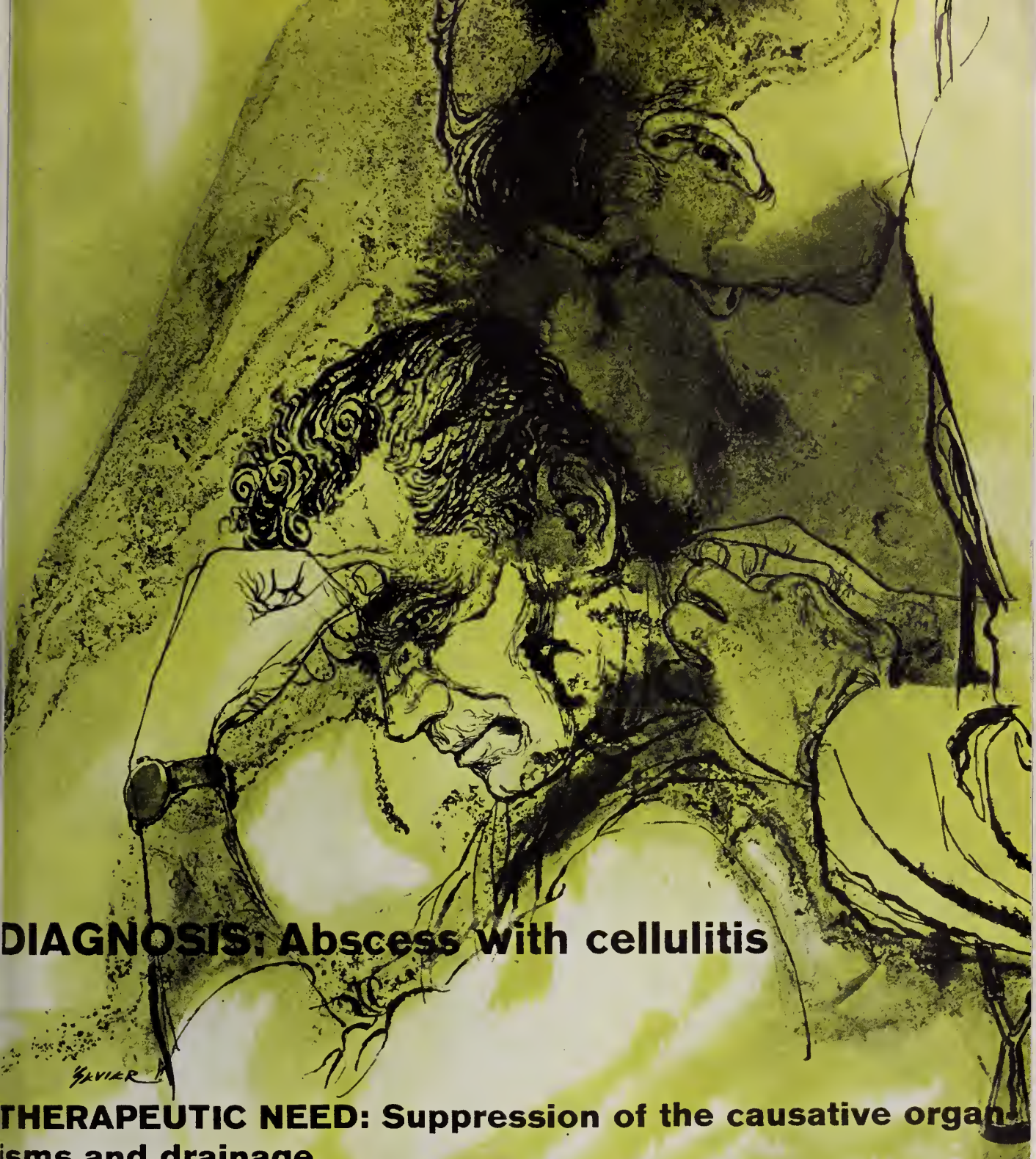
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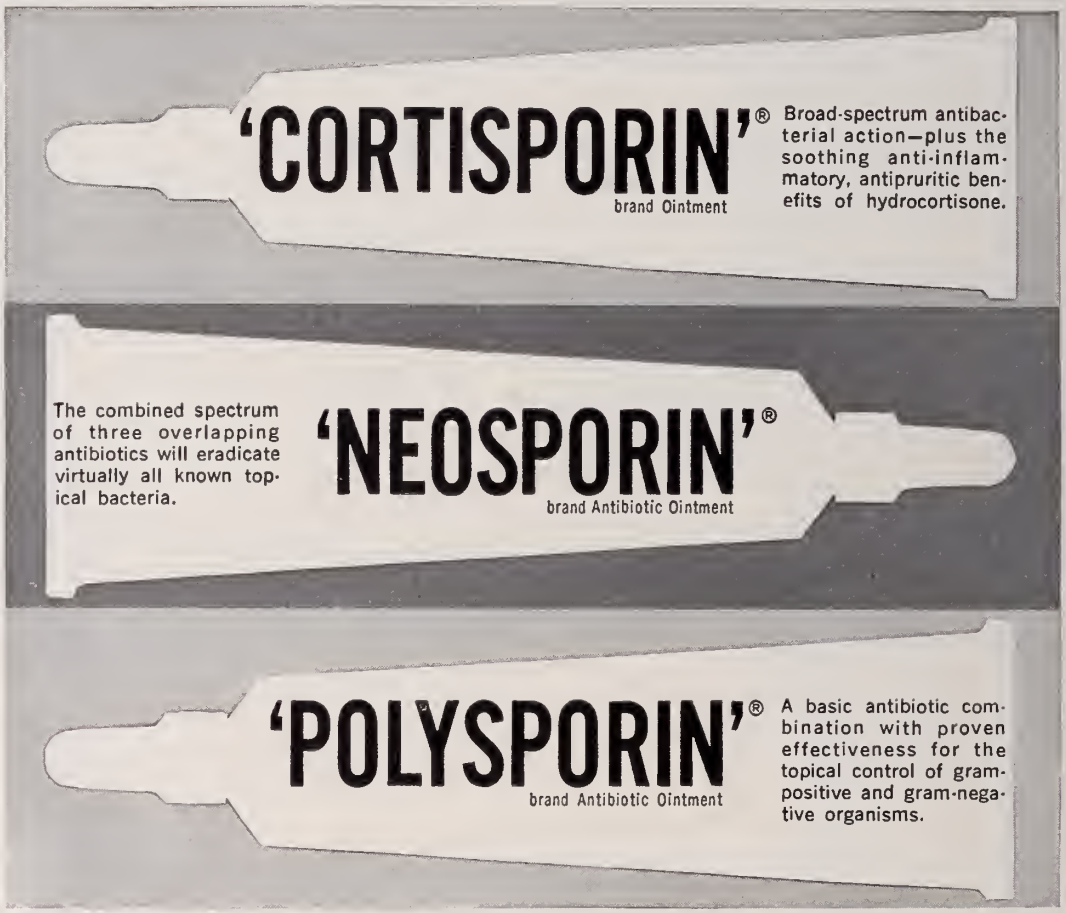
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JUNE, 1962

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Pathology of Tumors-Current Concepts*

• The problem of tumors remains clouded—in part by old wives' tales, incautious interpretation of statistics, an occasional smattering of charlatanry, physician-ambition, and incorrigible well-wishing. Although the long-sought "major breakthrough" in knowledge of tumor biology is not yet at hand, many rewarding explorations have been made in the pathology of neoplasia centering in areas of genetics, radiobiology, histochemistry, immunochemistry, electron microscopy, microbiology, tissue culture, biophysics, and morphology.

JEFF MINCKLER, Ph.D., M. D.†
Denver, Colo,

Introduction

ALTHOUGH not immediately at hand, the long awaited period of major scientific "breakthrough" in tumor knowledge seems to be approaching. Already available are dramatic investigative tools which have practical uses in the experimental laboratory and, more particularly, are applicable to individual tumor analysis in terms of occupancy in an individual host. Consonant with this is the requirement of a re-evaluation of the present status of medical attitudes in the difficult and complex area of tumor management. Attending almost all major disease conquests in history there have been complemental, but seemingly almost diametric approaches on the part of medical management and medical scientific investigation. The well-known story of the conquest of poliomyelitis is illustrative. Basically, the areas of interest in the poliomyelitis problem were, in the early phases, framed around these apparently conflicting views:

1. That polio virus *causes* poliomyelitis, and

2. That polio virus *prevents* poliomyelitis.

Strangely, these opposing statements are equally true when qualified, but they keynote the attitude of the two approaches to the polio problem. Holding to the first view led to the enormous advances in polio therapeutic medicine including the development of the complex field of medicating viable intracellular agents without destruction of the cell and numerous treatment and rehabilitation programs. The second attitude was generated by the fact that almost all people seemed to carry the agent at times, especially during epidemics, and by this device develop im-

* Presented at the Twenty-fifth Annual Meeting of The New Orleans Graduate Medical Assembly, March 13, 1962.

† Pathologist, General Rose Memorial Hospital, Denver, Colorado.

mune bodies against it. This view led to demonstration of rising antibodies to various strains of the agent and culminated in the development of the vaccines which now promise to virtually eliminate polio as a major trouble maker. Obviously the two approaches complement each other and each is essential to overall medical programming. At the same time the first view, with attention focused on the agent, led to "closing schools, closing pools" type movements which would actually appear to deprive the prospective hosts of their natural source of antibody stimulation. Without implying that the "antigen-antibody" relationships are known to be important in human tumor tolerance, certain parallels of the polio story to the present status of attentions to neoplasms can be drawn. The following introductory remarks summarize some of the views which shape the medical approaches to the tumor problem and dictate some of the avenues of investigation.

1. In the family of tumors the best tolerated neoplasms appear to be those that are self-managed through cultivation of resistant factors or anti-aggressins in the host which are yet basically unidentified. Classical examples include: occult carcinoma of the prostate which may be totally inapparent clinically for many years in the aged; chronic leukemia; chronic carcinoma of the breast; etc.

2. "Chronicity" in a tumor is almost invariably a favorable sign among neoplasms. In general, the longer the tumor has existed, the better the prognosis.

3. On occasion, early diagnosis and treatment of a tumor which has good prospect of being self-limited can lead to mismanagement or overmanagement. With increasing experience particularly through the activities of tumor boards this is being recognized and avoided (e.g., occult carcinoma of the prostate; chonic leukemia).

4. History would indicate considerable certainty that the procedures now employed in the management of currently uncontrolled cancers will be regarded as barbarous five years from now. Quarter-body amputations for sarcomas and melanomas have been largely discontinued and there are indications that supra-radical procedures in general are increasingly avoided.[1] Cytotoxins have been recommended as additions to surgical treatment of aggressive cancer of the breast. Radical radiation may be supplanting surgery in cancer of the lung. These represent several of the many similar changes in management practice appearing in the last few years. This is, of course, as it should be but distinctly speaks against the doctrine of adoption of "standard" treatment programs and clinging to them overlong.

5. Cancer (neoplasia) is not a disease entity but an almost universal biologic tissue behaviorism which is a part of life in almost all its forms. There are probably as many types of cancer as there are infectious diseases, each requiring independent investigative attention and management if appearing as an individual disease entity. Each tumor must be viewed in terms of the reactive capabilities of the individual host bearing it.

6. The reasonable parallel of neoplasia to aging is often drawn. It is probably as fallacious to speak of "curing" cancer as it is to speak of "curing" growing old. Perhaps a better term is "salvage" which seems increasingly properly used as a medical designation of results from tumor management. It is probably unwise to think of excision of a keratosis as a "cure" of aging. At the same time it is a definite salvage operation. Similarly, excision of a transitional papilloma of the urinary bladder is an excellent salvage procedure but in no way signals a "cure" of cancer of the bladder.

7. Neoplasms can be modified, palliated, and adjusted to, and some of the entities probably eradicated. An example in point is carcinoma of the cervix whose inferred biology probably best represents the traditional view of tumors—that of normal tissue converting from whatever cause, to atypism, and this, in turn, to in-situ carcinoma, super-

ficial carcinoma, invasive carcinoma, and metastasis. These events are presumed to exhibit a "time" relationship and continuum. Few cancer complexes are so well outlined biologically even though many are equally accessible to view. Time and growth relationships are easier to suppose than prove.[2]

8. Much clinical research, like basic science research, finds its way into areas where there seems to be little prospect of reward. With the results already tallied in combating cancer of the stomach by surgical means alone, for example, it would seem advisable to encourage a "start-over" attitude.

9. The arithmetic of handling biologic data is notably subject to question and it is doubtful that a well-controlled report of experience with human cancer is currently available.[3]

10. In present knowledge it is often impossible to be certain that a person who handles a malignancy well does so *because* of treatment. An example is the similarity in reported salvage in breast cancer which seems unrelated to type of treatment (radical 54 per cent, simple 59 per cent five-year survival).[1] Many times the balance between an aggressive tumor and its resistant host seems better related to some, presently obscure, anti-agressins which distinguish that particular tumor-host relationship among many so afflicted.

11. Clinical testimonials have their value but may well be over-used since they can be manipulated into line to illustrate a point. Each physician, for example, has many patients who have tolerated aggressive malignancies well. These, assembled as a report, can be quite misleading. Perhaps it would be well to stress the need for more basic information and to minimize for a time the clinical testimonials in the area of reports on neoplasms.

12. It is often difficult to determine whether management of tumors is based on facts or on adherence to tradition. There is a tendency to agree on management and adhere to it on penalty of exceeding common or standard practice. This attitude has had the effect of "upgrading" the practice of oncology but, in the same way, may detain advances in deference to standard and acceptable management however inadequate.[4]

Current Analytic and Investigative Tools in the Pathology of Tumors

Already at hand is an impressive array of equipment and techniques applicable to the appraisals of neoplasms in the best possible manner of use to the physician—as an analysis of a specific tumor in relation to a specific host. Generalities regarding tumor analysis must also be available in terms of statistics, experimental equivalents, and comparative studies to place the new information in proper practical light which contributes to diagnosis, behavior, and prognosis as well as to basic understanding of tumor biology. Following are brief summaries of modern techniques which are applicable to the practical study of tumor pathology and through which enormous profit in tumor management should accrue. It is hoped that these techniques might become available to all physicians but it is abundantly evident that the requirements in space and funds to accomplish this might well enforce delays until general physician demands become more strikingly evident.

1. **Routine and special tissue stains.** There remains much to be learned about tumor biology in routine and specially stained tissues. The classification and histologic grading of tumors provides the basic material for records and registries. Improvement in diagnosis by these means undoubtedly accounts for much of the changing statistical scenes in tumor reports. Recognition of adenosis in contrast to cancer of the breast or myeloid metaplasia in contrast to leukemia, and hundreds of other refinements in morphologic appraisal of tumors have improved enormously the accuracy of diagnosis, sometimes to the detriment of old statistics. By special stains (those which demonstrate cell structure in contrast to chemical structure—histochemistry) it is quite possible to assign tumor derivation, intermediate steps in tumor development, and

tumor interrelationships with certainty. For example, a glioma can be distinguished from a cerebellar sarcoma by demonstration of collagen fibrils in the latter. Similarly, as another of many examples, cilia can be demonstrated clearly by special stains which help in allocating a primary site to an otherwise obscure neoplasm.

2. **Use of the cryostat.** The use of the cold-chamber freezing microtome has so improved the area of rapid sections that accurate diagnosis of most lesions (variously estimated from 40 to 80 per cent of all tissues) may reasonably be expected in a few hours after surgery. The economies of this to the patient and the turnover in the hospital promise to be altered greatly by this technique. The cryostat also makes readily available an abundance of easily preserved, unfixed and unstained sectioned material whose chemical disintegration is interrupted by the freezing. Accessible, then, are numerous histochemical studies (e.g., enzymes) on tumors which in routine handling would be destroyed by fixation.

3. **Phase and interference microscopy.** By these devices it is possible to make visible many details in cellular morphology which are optically too transparent for demonstration by other methods. The techniques are particularly useful in studying living cellular components which permit observations in undisturbed living sequence and unaltered by fixatives or stains. They also admit accurate quantitative studies of size and amount of organoids or intracellular structures which are commonly a point of vital importance in comparison of tumor cells with normal cells.

4. **Cytology.** The role of cytologic screening in control of cancer of the cervix is universally well known and generally respected. The use of the technique in the problems of gastric and bronchial cancer and other areas has been far less fruitful. The cytologic study seems to have a permanent position of usefulness in oncology, particularly in tumors of the female genital tract.

5. **Histochemistry.** This area of tumor pathology has to do with chemical identification by histologic means. The techniques are employed to detect chemical (rather than structural) entities both within tumor cells and in the products of the interstitial substance. By this means it is possible to detect and follow the metabolic pattern of many proteins, fats, carbohydrates, enzymes, pigments, pathologic deposits, and exogenous substances. The histochemistry of tumor cells has much promise as an investigative tool. It is also useful many times in practical identification of tumors or their derivation such as detecting iron-bearing pigment, mucus production, etc.

6. **Fluorescence microscopy.** The emission of visible light by substances which absorb radiation provides a selective device by which such substances can be detected. Some fluorescent substances of interest in tumor pathology occur naturally (vitamins, porphyrin, enterochromaffin cell content). Other fluorescence materials can be produced by tagging with fluorescent substances of known chemical affinity. The use of this technique in immunochemical demonstrations are especially noteworthy and hold promise of permitting detection and localization of antigenic viable agents, tracing of non-viable antigens experimentally, membrane transport by labeling, storage of natural antigen, activities of extrinsic antigens, and behavior of autoantibodies.

7. **Tissue Culture.** The development of tumor tissue cultures in either natural (guinea pig eye chamber) or artificial media has been a fruitful investigative area and holds much promise in the following fields. *Genetic studies* of tumor cells and their chromosomal complement become accessible by this means. *Viable agents* in their relationship to tumor etiology or symbiosis come under reasonable control through tissue culture techniques. *Cytotoxins* and *drug actions* on tumor cells are logically becoming dependent upon reactions of tumor cells in culture for anticipating their effects. *Immunochemistry*, particularly in the field of tumor-inhibi-

tory substances, comes into more than indirect range through use of tissue culture. General *cell behavior* providing information on histogenesis, cellular interrelationships, and potentials of tumor cells in reactions, is accessible to direct view through tissue culture. Other advanced techniques (e.g., fluorescence and phase microscopy) can be effectively combined with tumor tissue culture in a composite investigative procedure with great promise.

8. **Experimental Pathology.** Disease equivalents in experimental manipulations never quite duplicate human disease experience. There is, therefore, a recognized difficulty in direct transposition of experimental information to human material. Nonetheless, few areas of investigation have contributed so greatly to basic knowledge of tumors and most authorities look to experimental pathology as the most probable source of background information leading to eventual control of cancer. Three areas of concentration of effort deserve special mention: (1) experimental physiochemical mechanisms of tumors (chemical analysis, enzyme studies, metabolism, radiation effects, membrane studies and cell function), (2) experimental microbiology of tumors (including the role of viable agents and the immunochemical features of tumors), and (3) experimental anatomic pathology (cell growth, development of tumor-sensitive and resistant strains, genetic studies).

9. **Special chemistry and physics.** Adaptation of analytic methods to tumor makeup has been fruitful in ascertaining chemical and physical differences among neoplastic components. This includes electrophoretic studies of tumor proteins, the electrically induced migration patterns of the cells, spectrographic analysis of tumor components. Engineering developments and instrumentation have provided many basic tools adapted to the study of tumors. Pharmacologic studies provide the rapidly developing field of cytotoxins which are becoming increasingly important in therapeutic oncology.

10. **Electron microscopy.** Increased magnification and resolution admit analysis of cellular and intercellular structures from a few thousand diameters to structural analysis at the molecular level. Of particular interest are the ranges of a few thousand diameters magnification which directly extends the familiar structural features viewed with light optics. The interrelationships among tumors and their components have been greatly clarified through improved knowledge of structural detail.

11. **Radioisotopes.** The use of radioisotopes in oncology have been directed to both therapy and diagnosis as well as to basic studies. As a radiation source, radioisotopes find usefulness in therapy in many well established ways, notably radioactive gold. Diagnostic use of radioisotopes in thyroid tumors is also well accepted. In addition, radioisotopes provide a clinical experimental tool which is valuable in localization of tumors, membrane permeability studies, fluid exchanges, and various autoradiographic tagging techniques with particular promise in supporting histochemical and immunochemical investigation.

Conclusions

The most obvious conclusion from this review must be the insistence on pressure for more basic information about tumors and the adaptation of laboratory findings to practical tumor management. There are, however, also three organizational moves which are well known to be effective in combating neoplastic disease and in enforcing upgraded clinical oncology. While these organizations are represented in many hospitals, any staff not so assisted might well provide:

1. **Tumor Board.** The advantage of information from multiple sources finds one of its best expressions in the tumor board (attending man, internist, surgeon, gynecologist, radiologist, pathologist). The problem of requiring tumor patients to be reviewed by the Board occasionally meets resistance on the grounds that the requirement interferes with private practice.

Usually, voluntary use of the Board will be so successful that practically all tumor patients will be reviewed without making it mandatory.

2. **Tumor Registry.** Few things will help more in coming to proper conclusions regarding tumor control than providing accurate, uniform, and accessible records. Use of modern information storage permits practical use of data which has heretofore been unknown in medicine.

3. **Geriatric program.** In general, the aged patient would seem to provide great wealth of material in investigative oncology. These are the people who have survived or escaped neoplasia or characteristically handle it better than most. Somewhere lies the answer.

With the proper combination of new techniques and a well organized cancer program there is every reason to hope that improved, severely objective, and unemotional approaches to the problem will contribute greatly to the understanding of tumors.

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Chemotherapy in Tuberculosis

I have a recent report by Dr. William S. Middleton, medical director of the Veterans Administration, that the VA has closed down 11 tuberculosis hospitals in 10 years. In 1950 there were 21 hospitals with 15,690 beds. Today there are only 10 TB hospitals with 9,037 beds. . . . The institutions for tubercular veterans maintained by taxpayers have been cut by more than 50%, with all that means in savings to all of us. And the primary reason for this decline in the cost of medical care for tuberculosis is drugs. Dr. Middleton attributes the VA record to new and specific drugs in TB chemotherapy produced by our ethical drug industry.—Austin Smith, M. D., President, Pharmaceutical Manufacturers Association.

Alcoholism and Excessive Drinking*

An Understanding of Frailty-A Barometer of Our Socio-Professional Consciousness and Response. Our Management

• Today, alcoholic beverages are an accepted part and potion of the social scene. Mild, moderate and excessive drinking contributes to the modification of every experience. Excessive drinking; occasional, transitory or repetitive compulsory pattern, is a problem met by every practicing physician. Then, is he judge, physician, or . . . brother?

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IN 1953, a Resolution was adopted by the House of Delegates of the American Medical Association recognizing the validity that alcoholism was a treatable sickness. In retrospect, this Act appears at best a gesture of ironic honesty; for all of us in our moments of sober reflection have acknowledged that truth: **Alcoholism is a sickness.** This Resolution then, was not a revelation; a new discovery; it was a significant acknowledgement.

Direct Results

Alcoholism, acute or chronic; disables, ravages or kills, directly or indirectly, more people in more ways than statistics could ever possibly reveal. The direct results of excessive drinking are those most readily seen and recorded. The indirect results are lost, ignored or not recorded because they are manifest at myriad points along the chain reaction of effect revealed in disciplines other than our own.

For a moment, let us recall but a few of the direct results of alcoholism or prolonged excessive drinking as they are met by internist or general practitioner. Commonplace are both objective and subjective manifestations of altered function. There may be stupor, delirium or coma; mucous membranes are injected; dehydration is obvious; tremor and agitation with restless, often purposeless movement is seen. Tachycardia usually is present, but heart sounds may be masked by the abundance of coarse bronchial rales, indicative of aspirated or stagnant mucus; the accumulation of many days and nights brought about by prolonged anesthesia or the normal cough reflex and the irritant action of alcohol. The liver may or may not be enlarged, the stomach is often distended, and more often than not, both bladder and bowel reveal either incontinence or retention, according to the vagaries of individual response.

Add to this the emotional content of the first hours of awareness. There is depression, anxiety, remorse, self-reproach, or an anguish of fear worthy of any psychiatric state. This catalogue of derangement fulfills every criterion of sickness as we understand the word.

Alcoholics happen to be human too, in all the other ways that illness may be manifest. Liver dysfunction and pathology are expected, but tuberculosis, diabetes, cardiovascular or cerebrovascular crises, and even malignancies have been found when adequate study has replaced the cursory examination so often given.

Surgical Emergencies

Coincident surgical emergencies also are met in the alcoholic. Aspirated foreign bodies, the ruptured viscus, acute appendix, perforated ulcer, and injuries of all types from burns to fractures, or re-

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sults of external violence of any nature. The surgeon, for his part, has reason to need to know about the alcoholic.

The obstetrician is not exempt from responsibility in this area either, for alcoholism in women does not ensure sterility. It is possible too, even if the pregnant patient does not drink, she could have an alcoholic spouse in the offing whose conduct and behavior could and usually does add complexity in all phases of prenatal, delivery, and postpartum care.

This naturally leads to the thought that pediatrician and child psychiatrist have direct concern in both physical and environmental health of the child, one or both of whose parents suffer from alcoholism.

Indirect Results

The **indirect results** of alcoholism or excessive drinking take our professional time to a fantastic degree. For not only do a host of ills come to our hands because deterioration and neglect have interfered with natural resources of recovery, or caused exacerbation of other chronic disease, or have caused insensitivity to early cardinal signs of trouble, but also we attend the manifold ills or trauma of those who suffer the violence or the neglect of the alcoholic. Our statistics do not, and cannot reveal the extent of such morbidity or death.

We know, far better than most, the harvest of trauma, the ills of malnutrition and neglect, the sickness consonant with poverty, and the psychosomatic disorders whose name is legion that daily come to office or emergency room or clinic. More or less successfully we ignore or dismiss the significance of the alcoholic in the home.

Often, in this contact, we pass judgment, and salve the professional conscience with such phrases as "Why don't you leave him"; "He ought to be locked up"; "Kick her out"; "Go to the police"; or "Why don't you do something about it"?

Such comments are almost as naive as those we so often direct to the alcoholic, himself: "You'd better quit drinking that stuff"; "Think of your family; can't you see what you're doing to them"? "Only a fool would drink when he can't handle it"!

How often we rub salt in psychic and spiritual wounds, as we apply our science to the healing of physical ones.

Beyond the immediate environment of the alcoholic and his home, we are so often tragically involved in the management of cases of assault, affray, auto accident, and berserk behavior released by intoxication.

This horizon of indirect and distant effects of alcoholism and excessive drinking can be and is limitless. All of us, in specialty or general practice, can embellish or illustrate this picture with countless experiences.

Yet, alcoholism and excessive drinking are but symptoms of individual frailty or personality disorder, the genesis of which may be attributed to many factors, and the development of which may result from many influences.

Our Outlook

The definitions of alcoholism are many, and each of us I am sure, has his favorite. Your definitions and mine will reflect both prejudice and observation. May I offer you mine, neither original nor scientific: "An alcoholic is an individual who repeatedly drinks to excess, without control, compulsively seeking in oblivion escape from forces within himself he cannot accept or understand, yet at the same time yearning hopelessly for a power greater than himself. The alcoholic retreats to his glass box, to escape reality, his destiny, and God". Yet—he is one of us. He is neighbor—a relative—a friend. Professionally he is a patient; sociologically he is part and influence of every community; spiritually he is brother to everyone who believes in a Creator.

He affects every home and every walk of life to some degree, with no benefactor or security, he is found in institutions of correction, on skid row or its colloquial counterpart, or in the charity wards of our hospitals.

Place in Labor

With the potential of unskilled labor, he may drift from job to job as periods of sobriety and the kindness of friends and tolerance of his environment allow. He contributes to a considerable degree in skills required by industry and the professions where his absenteeism is masked or covered by his wife, his co-workers or his colleagues.

During periods of sobriety his creative potential and competitive contribution may well be above average, for he is usually impelled by a desire to excel, or to compensate for the agony of addiction that haunts him.

Out of this hectic and chaotic picture that has been shown emerge several significant truths. Most of us will acknowledge the fact that alcoholism is a disease, that the alcoholic is a sick man. Some of us will accept the fact that not only is he a sick man, but that he can be treated. A few of us have not only accepted the facts that he is a sick man and can be treated, but also have found to our amazement and fascinated interest that he is worth treating.

Conversion

For in this process the miracle of conversion may take place.

To accept the alcoholic as a valid patient and to treat him takes away from our attitude and reactions a judgmental self-righteousness that can and does mar many a professional relationship. A new capacity for empathy is achieved that carries over into many another field of psychosomatic disorder. A rich and gratifying sense of professional accomplishment is felt that is as warm as it is unexpected.

This is our conversion—

The miracle of conversion also takes place in the patient; not in all, and not at once, but as he is made to feel our genuine acceptance and concern for him and his distress, he, too, can and often does accept the hopelessness of his situation. He drops the defiant and arrogant ego-defenses behind which he sheltered himself, and then together, both patient and doctor can share the effectiveness of medical treatment and for exploration of the resources of help, and together reap the rewards of rehabilitation.

Actually and honestly, I believe earnestly and sincerely in the rehabilitation potential of the alcoholic. Methods of treatment today are at hand, they are effective, and the resources for rehabilitation are tremendous.

Alcoholics Anonymous leads the way in the capacity of its fellowship to offer immediate help for the alcoholic, and to afford the steps by which sobriety may be achieved.

Understanding the alcoholic, and understanding our own attitudes and those of society in general about the alcoholic is being increased by tremendous strides through efforts of local, state, and national boards, by professional and non-professional interest and education. Research in the many facets of the problem is rapidly being made.

But above all, two signal influences are evolving:

1. The stigma attached to the disease is receding and,

2. More and more the medical profession is awakening to the fact that this is its responsibility. We have the tools to work with—the intelligence to use those tools—now all we need is to put our hearts in it.

The Undescended Testis

• The author gives a review of the literature, the incidence, etiology and pathology of this condition and a mode of surgical correction.

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THE purpose of this paper is to review the recent literature primarily on the management of the undescended testis. This condition is usually found on routine examination of an infant or child. When the patient is of prepubertal age this is of little concern to him but the parents are quite upset and expect an immediate solution to this problem. The literature is controversial in regard to the hormonal and surgical management of the undescended testis. A definite plan of therapy should be given to parents when this condition is found.

Incidence

Hofstatter (1912) examined 450 full term infants and found four per cent to have undescended testes. The incidence was 32 per cent in premature infants. Scorer,[1] in 1955, made a similar study of 1000 infants. His findings were identical to Hofstatter's. Of this group Scorer found that normal descent occurred in 48 of the 55 cases during the first year of life. Thus the incidence after the first year of life is only 1 per cent. This figure of 1 per cent is true of most other investigators.

The embryological development and descent of the testis is well documented in standard textbooks and need not be repeated here.

Etiology

The etiological nature of maldescent can be anatomical, hormonal, and possibly testicular dysgenesis characterized by seminiferous tubular immaturity and germinal aplasia as described by Sohval.[2] The most common anatomical reasons for maldescent are, (1) short spermatic vessels or vas deferens, (2) a long mesorchium, (3) poorly developed inguinal canal with absence of an external inguinal ring, (4) adhesions to the mesorchium at the internal inguinal ring. The hormonal factor must be admitted because an occasional testicle will migrate into the scrotum under chorionic gonadotropin therapy and because of the high incidence of descent the first six months after birth.

Pathology

The undescended testis has a normal microscopic appearance until about the fifth year of life. After the fifth year of life, growth begins in the undescended testicle but shows a lag behind the normal one as reported by Robinson and Engle.[3] The authors feel that for this reason treatment should be instituted between the sixth and tenth year of life. Schwartz and Reed [4] have reported similar findings. The question of malignant changes in the undescended testicles as compared to the normal testis is most confusing from the numerous reports on this subject. It does appear that malignant changes in the undescended testis is more than coincidental. Carroll [5] states that cryptorchids are not more prone to carcinoma while Culp [6] reports a twenty year study of testicular tumors and concludes that malignancy is thirteen times more common in the undescended testis. Carroll polled the American Urological Association and 76 per cent had never treated a malignant intra-abdominal or cryptorchid testicle. Their general opinion was that this condition is indeed rare. I agree with Carroll that the subject matter does not lend itself to acceptable statistical review.

Examination

On examination of the patient with an undescended testis, do not be misled by the hyperactive cremasteric activity in the early years of life. Re-examination

may reveal a scrotal testicle that previously was felt high up in the inguinal canal. Hernia should be checked for because approximately 75 per cent of these patients will have an associated hernia. The perineum should be carefully examined for a possible ectopic testicle. The testicle will be absent in 3 per cent of all cases.

Hormone Treatment

Treatment of the undescended testis should be instituted between the fifth and tenth year of life and preferably the fifth year. Chorionic gonadotropins have been used for some time. The more favorable reports probably have included cases of retracted testicles rather than true undescended testis. Excess treatment may cause manifestations of pubertas praecox and possibly stimulate epiphyseal closure. If one decides to use chorionic gonadotropin, it should be given at the age of five to seven. The condition should be bilateral and without a demonstrable hernia. Accepted doses of Antuitrin-S have varied from 500 units bi-weekly to 5,000 units daily for 3 days. To say the least the recommended dose is variable. Probably 1,000 units three times weekly for two weeks would be safe yet sufficient to produce adequate stimulation. If hormones fail, it can be assumed that the testis will not descend at puberty and surgery should be done. If the condition is unilateral, a mechanical factor probably exists. In this case it is wiser to do surgery without prior hormone injections.

Surgical Treatment

Surgical correction of the undescended testis was first devised by Keetley in 1905. Torek later popularized this procedure in which the tunica of the testicle is sutured to the fascia of the thigh and removed after a few months of fixation. Gross and Jewett[7] feel that the Torek procedure produces an unyielding, rigid fixation that interferes with the blood supply, thus increasing infertility. The most important step in correction of an undescended testis is adequate mobilization of the spermatic cord, even if the transversalis fascia and the inferior epigastric vessels must be divided. A heavy black silk traction suture through the lower pole of the testis and anchored to the thigh with an elastic band for six to eight days usually provides adequate fixation. Gross and Jewett reported 38 bilateral cases treated by the above principles and in the follow-up 79 per cent were fertile. Their cases were operated at about the tenth or eleventh year of life. Since we know the growth phase of the testis starts about the fifth year of life, I believe surgical correction should be done then.

Summary and Conclusion

Careful examination, diagnosis, and a plan of therapy for the patient with bilateral or unilateral undescended testis should be done at an early age, preferably at the age of five or six.

By trying hormone therapy early it is certainly not necessary to wait until puberty to see what happens.

Adequate mobilization of the spermatic cord is essential if good results are to be expected. Fertility and a normal position in the scrotum are primary objectives but the prevention of undue trauma and psychologic reasons are also valid surgical indications. The question of decreasing the chances of malignancy by surgical correction probably has not been answered yet.

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Fractional Doses of Radioactive Iodine (I^{131}) For Intractable Angina Pectoris*

• Eight cases were given the radioactive iodine of whom four died of their disease. Fractional doses of I^{131} seem safe and effective.

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MOST of the patients with angina pectoris respond to careful medical management and are able to return, at least in part, to their previous mode of living. There still remain a few who are refractory in spite of a better understanding of atherosclerosis and a multitude of therapeutic regimes aimed at preventing its progression.

In considering the use of radioactive iodine for the treatment of refractory angina pectoris, it should be emphasized that the therapy is only symptomatic. Nevertheless, purposeful induction of myxedema in a euthyroid patient lessens the demands of the heart by reducing its work and requiring a lower level of oxygen consumption.[6] This is especially true where arteriosclerotic coronary vessels and previous myocardial infarction impair the circulation to the cardiac muscle with resulting anoxemia and angina.

The thyroid has a remarkable affinity for iodine and appears to be the only organ capable of concentrating that element to a high degree.[11] Unlike the action of roentgen ray that of I^{131} is selective. I^{131} has a half life of eight days and emits both beta and gamma rays. Most of the irradiation is due to the beta rays which have a maximum range of two millimeters in tissue.[10] This effect is insignificant to the parathyroid glands and structures surrounding the thyroid. However, a completely equipped laboratory is necessary for proper handling of the material, with apparatus for measuring by remote control and for dilution.

Segal et al[10] note that in addition to myxedema there may be some side effects of general body irradiation. Up to the present time there is no evidence that I^{131} in the doses used for therapy has any carcinogenic or leukemogenic effect. This author in a previous report[8] treated 13 patients with therapeutic doses of I^{131}. Seven of the patients were women and 6 were men; their ages ranging from forty-five to seventy-nine years. Dosage of I^{131} varied from 25 to 40 millicuries. Acute radiation thyroiditis occurred in all instances between the third and seventh day. This was characterized by pain and tenderness over the gland and a mild febrile response. One patient subsequently died ten months after therapy of a lymphoma originating in the neck.

Harper[9] reported the use of radioiodine in 29 cases. An average of 15 millicuries was given as an initial dose. Repeat doses were given every three months to keep the BMR at a level of minus 20 to minus 25. Segal et al[10] treated 63 patients over a period of eight years with fractional dose therapy. Blumgart[3] reported favorable results in 87 of his own cases and collected a total of 1211 patients treated by other clinics. Albright[1] reported good effects in 24 cases with a divided dose approach followed for two years.

Freedberg[7] and Segal[10] report necrosis of the thyroid gland following radioiodine therapy with breakdown of normal structure and release of preformed thyroid hormone into the circulation. A transient hyperthyroidism ensues with increase in the work of the heart and exacerbation of symptoms. After two weeks there is grad-

* Presented at the Eightieth Annual Meeting of The Louisiana State Medical Society, May 4, 1960.

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ual induction of a hypothyroid state with clinical improvement over a period of four weeks to three months.

Since the temporary increase of anginal attacks is opposite to what is intended for such patients adjustment of dosage seems indicated. Otherwise serious consequences may ensue for patients living a marginal cardiac existence. Segal et al [10] state that the reaction of acute radiation thyroiditis occurred only in patients receiving more than 12 millicuries as the initial dose. Twenty patients so treated showed no significant aggravation of symptoms.

Of this author's original 13 cases [8] receiving from 25-40 millicuries of I^{131}, all showed exacerbation of symptoms three to seven days after receiving the initial dose. Eventual marked improvement occurred however. Since this experience coincided with that of others mentioned above, future cases were given smaller doses. Eight of 13 patients were alive at the time of the original report in September, 1956. Up to the time of this report 4 additional patients have expired, 3 with recurrent coronary thrombosis and 1 with a cerebral accident. Some of the surviving 4 cases were treated as early as 1951, one male patient, a state probation officer has been on full duty since 1956. He is required to attend court frequently and reports rare anginal attacks. Another patient, a registered nurse has been able to do part time duty with minimal symptoms.

Clinical Indications and Contraindications to I^{131} Therapy

Most authors [1, 6, 7, 10, 11] agree that favorable candidates for I^{131} therapy include the following:

1. Patients with severe angina who fail to respond to conservative medical management. This should include such essential points as weight reduction where indicated, restriction of activity, cessation of use of tobacco, and the use of vasodilator and sedative drugs.
2. Remission unlikely because of length of duration of symptoms.
3. Patients with decubitus angina frequently awakened at night, adequate rest impossible.
4. Predicted immediate duration of life sufficiently long enough to allow for improvement.
5. Patients with no sign of hypothyroid state.
6. Cooperative, alert, intelligent and emotionally stable individuals.

Contraindications to I^{131} Therapy Include:

1. Emotionally unstable individuals especially those subject to depressive episodes.
2. Peripheral vascular disease.
3. Patients with rheumatic arthritis or active rheumatic fever.
4. Recent or impending myocardial infarction.
5. Diseases of metabolism, such as diabetes and hypercholesterolemia.
6. Pre-existing myxedema.
7. Presence of embolic phenomenon that dominate the clinical picture.
8. Rapidly progressive clinical course, i.e.: malignant hypertension, syphilitic heart disease.
9. Poor risks for follow-up treatment and careful future management.

Selection of Patients

The present series includes 8 patients treated with fractional doses of I^{131} followed from 1956 to the present time. See tables 1, 2. Patients were selected on an individual basis when all other forms of medical therapy failed to produce improvement. Four were women and 4 were men; their ages ranging from fifty to eighty years. A tracer dose of 50 microcures was used and the uptake was measured at a distance of 17 cm. directly over the gland in the biophysics department at Touro Infirmary. Normal uptake of radioiodine is considered to be between 10 and 40 per cent of the tracer dose in twenty-four hours. Only one dose of I^{131} has been given so far to this series. Some improvement was noted in most of the cases in from three to eight weeks. One patient, case 5, died two weeks after receiving the initial dose before therapeutic effect could

TABLE 1
RESULTS OF TREATMENT OF ANGINA PECTORIS WITH FRACTIONAL I^{131}

Pt. Age	Diagnosed	% Uptake I^{131}	Treat. I^{131} (mc)	Result of Therapy
1 74 yr.	ASHD 9/8/48 myocardial infarction	6/ 6/57 39.5	6/13/57 10	Striking improvement 6 weeks after treatment. Averages 2 nitroglycerin/week.
2 62 yr.	ASHD 8/30/58 myocardial infarction	10/13/58 27.6	10/17/58 10	Some relief 6 weeks. Modern improvement 6 months. Averages 3-4 nitroglycerin/week. Died 19 months after treatment. Cardiac arrhythmia? (Expired suddenly 4/9/60)
3 50 yr.	ASHD 7/2/58 myocardial infarction	9/ 9/59 17.4	9/14/59 10	Improvement in one month. 1-2 nitroglycerins daily. Striking improvement in 2 months. No nitroglycerines at presnt.
4 65 yr.	ASHD 4/16/53 myocardial infarction	11/27/57 23.4	12/ 2/57 10	Some improvement 2 months after treatment. Marked improvement 3 months. Averages 3 nitroglycerin/week. Patient also had a severe gout. Jan. 1959 second coronary. Died cardiac failure 2/2/59.
5 61 yr.	ASHD Chronic coronary insuffic.	5/27/57 33.6	7/11/57 25	Given larger dose for intractable angina. Died 7/27/57 before effect noted. All coronary vessels 85-95% occluded—Recent—Infarct of sptum and left vntricle.
6 80 yr.	ASHD 9/12/51 myocardial infarction	1/14/58 18	9/ 9/58 10	Some improvement in 8 weeks. Marked improvement in 3 months. Did well until late 1959 when chronic heart failure ensued. Died April 6, 1960.
7 86 yr.	ASHD-CHF 7/17/57 myocardial infarction	11/27/56 56	12/ 9/56 4	Some improvement in 3 weeks. Marked improvement 2-3 months. No nitroglycerin at present. Cerebral insufficiency March, 1960—no residual.
8 52 yr.	ASHD Angina, Chr. Auricular flutter	3/27/60 27.4	3/29/60 10	Improved in 3 weeks. No angina.

be noted. Case 2, a retired policeman, was relieved first, but died recently before additional therapy could be given. Case 4 showing marked improvement after initial therapy in December, 1957, had another coronary thrombosis in January, 1959, and died in massive pulmonary edema February, 1959. An excellent result was obtained in Case 6 treated in September, 1958, but recurrent attacks of cardiac failure beginning in late 1959, caused her death in April, 1960. It will be noted that the patient listed as number 7 had a high radioiodine uptake and because of this a smaller dose was given. Case 8 had a recurrent auricular flutter which became chronic and difficult to revert to a sinus rhythm. His angina was likewise refractory to the usual medical regime. In summary 4 of the 8 patients are alive at the time this report is presented.

The presence or absence of angina pectoris is difficult to determine by objective tests. The patient's record of chest pains is correlated with his physical activities. Mental attitudes must be taken into account also. Since the doses of I^{131} were so small, clinical improvement could not be coincided with the onset of myxedema. The time when mild hypometabolism and clinical improvement will occur cannot be predicted. When fractional doses of radio-

TABLE 2

Pt.	Interval from Treatment to Improvement	Result of Last BMR	Blood Cholesterol	Present Clinical Symptoms	Follow Up Examination	
					Duration	Result
1	6 weeks	4/ 9/60 —18	5/27/57 174 4/ 8/60 280	No nitroglycerin except with unusual stress	34 months	Excellent I^{131}–4/15/60 31.4%
2	6 weeks	4/ 6/60 — 8	4/ 6/60 310	Patient died on Itrumil (Jan. 1960)	19 months	——
3	8 weeks	4/ 8/60 —18	4/ 7/60 340	No nitroglycerin except with unusual stress	8 months	Excellent
4	8 weeks	——	——	Patient died	14 months	Good
5	Died 2 weeks after I^{131} given	——	——	Patient died	2 weeks	——
6	8 weeks	——	——	Patient died	18 months	Excellent
7	3-6 weeks	4/ 7/60 PBI 6.2 No BMR	4/ 7/60 325	No Chest pain occurs & C V insuffic. 3/60	48 months	Excellent
8	3 weeks	——	4/15/60 268		2 months	Good

iodine are used, one must be guided by clinical judgment. Electrocardiographic changes which are of some help are modified by the presence of organic heart disease and certain drugs. However, serial tracings may be of some value in following the progress of a patient. Basal metabolic rates taken at intervals, I^{131} tracer studies, and protein bound iodine determinations will better assist the further dosage of radioiodine.

Cholesterol values obtained in the author's first series [8] following radioiodine therapy were high. Fractional doses of I^{131} have not resulted in such high levels.

Blumgart et al [4] reported their clinical and post mortem observations in eight patients who survived from one to thirteen years following total thyroidectomy. These patients had elevated cholesterol values and hypometabolism; but no occlusion of their coronary vessels was noted. Only three of the 8 cases had slight narrowing of one of the main stems. The remaining 5 had arteriosclerosis of varying degree with some arterial damage, but conditions were similar to those observed in euthyroid patients.

Discussion

The physician who gives his seriously ill cardiac patients I^{131} is employing symptomatic treatment, the rationale being that reduction of total metabolism will reduce the cardiac requirements. Segal [10] has called attention to the fact that some patients improve on placebo therapy and others show spontaneous remissions and exacerbation in their clinical course. This makes the interpretation of the results of any form of therapy difficult. Harper [9] reports the results of treatment with I^{131} in 29 cases as: excellent in 58 per cent and good in another 29 per cent.

Blumgart et al [3] suggest the classification of results as: (1) excellent—with

marked improvement over the pre-treatment state with no recurrence of symptoms or marked diminution in the frequency and severity of angina pectoris. Marked increase in activity is tolerated; (2) Good or worthwhile — definite improvement with decrease in frequency and severity of attacks on the same amount of activity as before treatment. (3) No worthwhile improvement—it would seem important to have some form of standard classification to be used in all clinics attempting to evaluate the efficiency of radioiodine.

There is no doubt that the use of I^{131} has effected many comfortable months or years to the seriously ill cardiac patient. An increased knowledge of the complex relationship of the thyroid to other glands suggests the need for substitution therapy with other substances, such as the sex hormones. The effect of these hormones on the lipoprotein patterns of the blood is now well known. Improved dietary methods with the use of drugs to decrease certain elevated lipoprotein fractions seem to offer promise in the therapy of severe angina pectoris. The clearing of lipemic serum with heparin is another approach to the prevention of atherosclerosis. Surgical attack on "status angina pectoris" has been varied and aggressive, but results are inconclusive.

While all long range programs are under study, attention must be directed to more immediate means of reducing the load carried by a chronically diseased heart. Fractional dosage schedules of I^{131} seem safe and effective. Further studies seem indicated to clarify the advantages and disadvantages of this therapy.

Summary

Eight euthyroid patients with intractable angina have been treated with small doses of radioactive iodine after all conventional forms of therapy failed. Although 4 of these patients have died, their remaining months of life were made more comfortable and useful. The 4 survivors will be carefully followed and additional cases treated as indicated. It seems more logical to gradually reduce metabolism to a comfortable level with fractional doses of I^{131} than to use a single massive dose. The use of thyroid extract in small amounts to prevent clinical myxedema is then no longer necessary. Indications and contraindications for I^{131} therapy are again reviewed.

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Discussion

Louis A. Monte (New Orleans): When we think of coronary disease in an inclusive sense we must remember that we are concerned with the great killer.—Nearly one-half million persons are its victims each year. Hence any and all means that might aid in the reduction of this mortality, and just as important reduce the morbidity in coronary artery disease is both welcome and sorely needed. The use of the isotope, radioactive iodine (I^{131}) is just one of the therapeutic weapons currently in use, and when properly employed may serve as a useful measure.

Fortunately only a small percentage of anginal patients fail to respond clinically to the conventional measures so very well known to all of us. None the less these relatively few are more than sufficient enough to challenge our therapeutic know how and at times our patience. The relief

of the distress in patients with intractable angina pectoris is our responsibility and as clinicians we should be familiar with all possible aids.

Our first responsibility is the proper selection of patients. Generally speaking, we might include all those patients failing to improve or becoming worse on the conventional measures, providing of course sufficient trial is allowed and the patient has given full support by way of cooperation. These usual measures include the use of coronary artery dilatating drugs; the building up of effort tolerance while under the influence of these dilating drugs; dietary programming that will bring about loss of excess weight and if believed beneficial, reduce the blood level of suspected harmful agents; the discontinuance of smoking and we might even try using such drugs as isoniazid or iproniazid.

The contraindications to the use of radioactive iodine are not too numerous and include those patients with rapidly progressive coronary artery processes, recent coronary occlusion and such associated conditions as malignant hypertension and rheumatic fever and others as mentioned in more detail by Dr. Goldman.

The use of radioactive iodine is nonspecific since its value is solely dependent upon the production of a hypometabolic state. This lessened demand upon cardiac output is comparable to sustained physical rest employed for shorter periods where cardiac rest is indicated. Whether used in the single large dose or in the more logical and now accepted smaller fractional dose program radioactive iodine does not alter the pathologic process existent in inadequate blood flowing coronaries. Actually we are merely attempting to so alter the patient's metabolic state so that it will better fit the diseased condition.

I shall conclude this brief discussion by posing a question. Might we be at the surgical threshold from where there might emerge a procedure of a definite nature or will the final answer be in the form of prophylaxis through controlled restrictive and altered dieting with or without agents that will so alter the body chemistry in a way to prevent atherosclerotic phenomena?

Drug Contributions to Health

During the past 20 years domestic drug makers have produced more remedies for more ills than at any other time. Since 1945 the death rate from eight major diseases including diphtheria, whooping cough and pneumonia, has been cut in half. Tranquilizers, pills for diabetics, oral polio vaccines have moved with record-breaking speed from laboratory to drug store. In the process the industry undoubtedly has made money . . . (even though) the risks, technological and competitive alike, tend to match the rewards. It has also made an unprecedented, if scantily recognized, contribution to U. S. productivity and health.—**Barron's Weekly.**

Multiple Primary Cancer.
A Classification with Report of Cases.*

• A thorough review of the subject listing the most probable sites for its occurrence and a review of cases.

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THE occurrence of multiple primary carcinoma in an individual who has or already has had a previous history of malignancy is no longer recognized as an unusual pathological curiosity. The concept of neoplasia has changed from that of a single disease entity, involving a single causative factor, to that of a general disease, embracing a great many diseased states and having certain pathological manifestations and biological properties in common. Malignancy is a type of tissue reaction induced by such various types of initiating stimuli as hormonal, chemical, physical and viral.[1] The resultant tissue mutation may well represent an autonomous response to the phenomenon of reaction-to-injury.

Etiology

Although many human tumors can be traced to such exogenous agents as chemicals or irradiation, or to such endogenous substances as hormones, in the great majority of cases no known cause seems apparent, even though some carcinogen must be the responsible agent.

The observation that the same individual may have multiple primary carcinomata at the same time or over a span of years has been reported frequently. The various reports on the subject have stressed differing approaches leading to conflicting results. These deal with sites of origin, the time interval between tumor appearance, rapidity of growth of each tumor and their response to therapy, whether surgical, radiological or chemotherapeutic. It has been observed that some tumors remain practically dormant for long periods, while others may even regress.

When Billroth first recorded his experience with cases of multiple primary carcinoma, he established the following criteria which he considered essential. These were as follows:

1. Each tumor must have an independent histological appearance.
2. The tumors must arise in different situations.
3. Each tumor must produce its own metastasis.

As time elapsed and the cure rate of the treatment of cancer improved, it was felt that these requirements were too rigid and not applicable to all cases.

Warren and Gates [2] later developed a more liberalized group of criteria which have been accepted by many investigators. They are as follows:

1. Each tumor must present a definite picture of malignancy.
2. Each tumor must be distinct.
3. The possibility of one tumor being a metastasis of the other must be excluded.

As a result of this classification more cases of multiple primary carcinoma are being reported.[3] The increase in curability of cancer, whether by surgery or radiation, has increased the possibility of the development of two or more malignant lesions, either in the same or different organs at the same or different times, and is established and recognized. More recently the recognition that cancer in situ is early cancer waiting for the time to approach explosive growth has also changed the picture.

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Any investigation of a large number of reported cases illustrates the fact that certain organs are more prone to contain multiple primary foci or are more subject to multiplicity. The skin is probably the most common site, especially in the male. The oral cavity is another such location, as it is a demonstrated fact that a patient with a cancer on a leukoplacic base cured by surgery has a greater probobility of developing another than by chance alone. The food and air passages are likewise frequent areas of multiplicity. The stomach and colon are notorious for the presence of second primaries.

In certain of the paired organs, such as the breast, ovaries and testes, the incidence is somehow related to hormonal influences and here multiple cancer shows a high rate of occurrence. In other paired organs, such as the lung, the finding of cancer in situ has been used to explain some of the poorer results of surgery.

Incidence

The incidence of multiple primary cancer varies in different studies.[9] Some authors report the frequency based upon their surgical experiences. Pathologists report the results of autopsy findings, which show a more accurate presentation. Consolidation of these many reports will offer something more nearly comprehensive.

Karger [4] has reviewed the incidence of multiple primary cancer in a series of 103,277 cases during a period from 1900 to 1951 from the Pathologische Institute in Kiel, Germany. His observations do not compare with others in this country. During the last ten years, of 1400 cases of cancer, there was an incidence of only 1 per cent double primaries. It was his conclusion that the occurrence of multiple primary cancer was no more frequent than would occur by the law of chance. Mulligan,[5] on the other hand, reported a series of 257 autopsies on persons over the age of 70 and found non-lethal second primaries in 23 cases, representing 10 per cent. Wu [6] reveals an incidence of 3.7 per cent in 816 necropsy records from the University of Chicago Clinic. Warren and Gates [2] found 40 (or 3.7 per cent) of multiple primary cancer in 1078 autopsy cases. They concluded that this high incidence was greater than could be explained by chance alone. Bugher [7] noted a rate of 3.1 per cent. On the other hand, Phillips,[8] in studying the skin alone, reports an incidence of 16 per cent. Finally, Warren and Ehrenreich [3] record a high rate of 6.8 per cent in 2829 cancer cases.

The above confusion in the recording of the above reports was done purposefully. It was to indicate the necessity of following some pattern. Only in this way will it be possible to uncover some uniformity that can be applied to therapy. Investigation of the numerous reports of the past decade are definite in the conclusions that the presence of a malignant neoplasm in the air and food passages imply an enhanced liability to the occurrence of further malignancy in the same system.

Classification

Analysis of the literature suggests the following as a practical classification of multiple cancer.[10]. It describes four types of multiple primary cancer:

1. Multicentric, if the two distinct carcinomata arise in the same organ.
2. Systemic, if they arise on anatomically or functionally allied organs of the same system.
3. Paired organs.
4. Random, if they occur as a co-incidental or accidental association in unrelated sites.

A typical example of the multicentric type are those which occur in the oral cavity, the lungs, the breast, the stomach, the colon and the skin. The systemic type is characterized by the appearance of multiple cancer in an organ system. Paired organs or those hormonally related are the lungs, breasts, ovaries, and testes. The random group are those most frequently reported in the literature. It is probably based on the premise that unless the second primary is so utterly different from the first, it might be construed as not being a bona fide second primary.

In proposing this classification, an attempt was made to separate the many records in a manner that their findings could be applied to practical clinical applications.

I. Multicentric Types—Same Organ System

a. **Food and air passages.**

The actual occurrence of multiple primaries in the buccal cavity is about 15 times greater than that which would be expected on the basis of chance alone.[11-15]

b. **Gastro-intestinal tract—Stomach and colon.**

Multiple primary cancers have been found in the gastric mucosa. It is presumed that the entire mucosa has been exposed to the same carcinogenic influence, be it inflammation, ingested carcinogens, or other unknown entities. Gastric cancers show multicentric zones of malignant change at some time in their development. The concept of cancer of the colon as a multicentric disease has steadily grown in acceptance.[16-23]

c. **Breast.**

There are numerous instances of the histological evidence that cancer of the breast is a multicentric disease. Malignant transformation often appears in multiple sites and many independent lesions occur in the ducts and acini. There appears little room for doubt that mammary cancer may constitute an entire breast disorder.[24-27]

d. **Lung.**

The number of reports dealing with bilateral frankly invasive squamous cell carcinoma in the mucosa of the major bronchi lends credence to the belief that cancer of the lung is multifocal, stemming from in situ cancer. This may explain to some extent the poor long term results in surgery in this disease. Whatever carcinogenic agent affects one portion of the bronchial tree, affects the entire bronchial mucosa. It is an all-or-none effect. Only when long time survivals of primary carcinoma of one lung are available will the contralateral in situ lesion take on true significance.[28-32]

f. **Skin.**

This is the most frequent tissue affected by multicentricity. Multiple carcinoma of the skin is incompatible with the concept of a single unifocal origin. The superficial plaque-like basal cell carcinomas could not each arise from a single focus but starts as a multifocal lesion. Pack has suggested that melanomata are indications of multicentricity.[33-35]

II. Systemic Types—Anatomically or Functionally Allied Organs

Here the distinction is less clear. In some of the organ systems the question of seeding has been difficult to exclude, especially as it pertains to the urological and gynecological viscera. The following division has been made empirically.

a. **Air Passages—Mouth, pharynx, larynx, trachea and lungs.**

One cannot but be impressed with the frequency of the association of laryngeal cancer with that of the oral and pharyngeal areas. On many occasions cancer of the lung has been found either serially or synchronously with cancer of the larynx. The predisposition of large areas of tissue as found here and in other systems is compatible with the theory that carcinogenesis is a drawn out procedure consisting of two stages. At first the tissue is irritated by the action of small amounts of specific carcinogens which convert a few cells from the dormant to the state of "initiation". The promotion or production of overt cancer depends upon a second factor, such as heat, light or irritation, which in themselves may not be carcinogenic upon tissue not so irritated.[29, 30, 32, 36-38]

b. **Gastro-intestinal Tract—Stomach, colon and rectum.**

Here again multiple primary cancers are not entirely incidental occurrences, but a similar organized response to the same influence acting throughout the mucosa, whether it is carcinoma of the stomach and appendix or carcinoma of the stomach

and colon. In the colon there are two other distinct effects which are provocative of multiple primary cancer; one is hereditary, i.e. familial polyposis, and the other irritative and inflammatory, i.e. ulcerative colitis. Whether a carcinogenic agent underlies either or both, is unknown at present.[39-47]

III. Paired Organs—Breasts, Lungs, Ovaries and Testes

a. **Breasts.**

The most important reason for continuing a follow-up on a patient that has had a radical breast operation is the observation that this patient has three or four times greater chance of developing a second primary cancer in the other breast than a woman of the same age group who is without disease. This percentage will increase with time due to longer survival with more radical surgery. It is not surprising to find such a high incidence of double cancer in the breasts in the light of the concept that cancer of the breast, as a systemic disease of the mammary apparatus is influenced by endocrine activity. One can more readily accept bilateral primary breast cancer as of independent origin.[24-27, 49-55]

b. **Lungs.**

It seems logical to assume that if carcinoma of the lung is due to a bronchial irritant, the entire mucosa of the bronchial tree must be exposed to the same carcinogen. The concept of a restricted single site is illogical. Once growth and autonomy have occured in one area, it becomes a matter of which group of altered cells grows the more rapidly. Sooner or later other sites of mutation will develop cancer, if the patient lives long enough.[28-32]

c. **Testes.**

Reports of the appearance of bilateral neoplasms of the testes are indeed rare. The lesion is so rapidly fatal that few cases have been recorded. However, it is not inconceivable that the hormonal influence that affects one side may also involve the other.

IV. Random Types

This group comprises the largest number of reported cases. The chief characteristic of this class is the totally separate and distinct groups of organs involved. There are very few multiple organ systems that have not been included. It has been suggested that this is an indicator that constitutes an indirect measure of the degree of intensity of malignancy or the predisposition or susceptibility of cancer in an individual.[56-60]

Case Reports

The following case reports are to illustrate this classification.

Mrs. L.C.A., a white female age 70, was first seen in 1939 complaining of a lump in the left breast. She was found to have a nodule near the nipple with axillary gland involvement. A radical mastectomy was performed. The tumor proved to be an adenocarcinoma of the left breast. After twenty years of good health, she was next seen with an acute intestinal obstruction following a long period of chronic constipation. An emergency transverse colon colostomy was performed. Exploration revealed a mass in the sigmoid colon. It was subsequently excised and her colon re-established. The tumor was a adenocarcinoma of the sigmoid colon. She had an uneventful recovery. In July 1960, she developed pain in the right shoulder blade area. X-rays subsequently revealed a metastatic destructive lesion. In the meanwhile a large mass in the right upper quadrant was found. She was explored and a large metastatic tumor involving nearly all of the liver was exposed. A biopsy report indicated that it was a papillary adenocarcinoma, site undetermined. She received several courses of 5-fluoro-uracil with only slight improvement. She expired in January 1961. At post-mortem, in addition to the destructive lesion of the right scapula and the large metastatic tumor of the liver, an unsuspected papillary cystadenocarcinoma of the left ovary was found. The metastasis to the liver was from this last and final neoplasm.

Resume—This is an illustration of both a random and a hormonally paired organ. The interesting feature was the long period between the breast carcinoma and the subsequent lesions.

Mr. C. C., a white male age 76, was first seen in August 1955, with a large sore of the right thenar area. It measured 3.5 cm. in diameter. The entire ulcer was removed and later covered with a skin graft. The pathological report stated

that it was a squamous cell carcinoma of the palm. The epitrochlear node which was also removed was negative. Recovery was complete. He returned in June 1960, with large fungating, bleeding and ulcerating tumor masses of the left leg and thigh. There were also numerous enlarged lymph nodes extending upwards to the groin. A biopsy of one of the tumors was reported as tumor stage of mycosis fungoides. He received five doses of nitrogen mustard intravenously followed by the excision of three of the other large masses. The Armed Forces Institute of Pathology reported it as lymphoblastoma. All the tumors and glands disappeared and have not recurred to this date.

Resume—Here is an instance of two separate types of cell tumors involving the skin, the latter of which responded excellently to chemotherapy.

Mr. O.B.H., white male age 67, when examined in January 1953, presented a lesion of the right side of his face which proved to be a basal cell carcinoma. In May 1957 he developed another lesion in the right naso-labial fold which was also excised and found to be a basal cell carcinoma. In October 1959 a large flat ulcerating lesion appeared on the right cheek measuring 2.5 cm. in diameter. This time he was referred to radiology for therapy. The next time he was seen was in January 1961. This time he had a recurrence of the tumor within the scar of the radiated area. He also had a recurrence of a cancer in an area which had received radiotherapy by a dermatologist. On the left shoulder he noted a dark sore that would form a scab and when the scab fell off it would bleed. All three of these lesions were excised. The one on the face was a basal cell carcinoma. The one on the right hip was a Bowen's intra-epidermal carcinoma, and the one on the left shoulder was reported as a malignant melanoma by the Armed Forces Institute of Pathology.

Resume—This case illustrates a multicentric type of cancer which in this instance involved the skin but which, in addition, also had a different type of cancer as well.

Mr. C.E.B., white male age 55, was found to have a non-symptomatic chronic lymphatic leukemia during a routine examination in Feb. 1957. His count fluctuated between 40,000 and 60,000. Following an attack of "viral pneumonia" in an adjoining city, he returned complaining that he was unable to recover satisfactorily. In March 1960, he was admitted to the hospital where he received 5 courses of nitrogen mustard, after finding that his count was 550,000 with 98 per cent lymphocytes. Therapy reduced his count to 63,250. He was then given 10 mg. chlorambucil and 4 mg. aristocort daily. Within one month his count dropped to 7,000 or 8,000 and has remained in remission ever since. During the therapy for his leukemia, he developed a basal cell carcinoma of the right side of his face, for which he received radiation with excellent results.

Resume—This case illustrates a random type of malignancy in which one was the hematopoetic system and the other the skin. Also of interest was the fact that chemotherapy did not prevent the appearance of another type of cancer.

Mrs. R. P., a white female age 75, was seen for the first time in November 1949, because of vaginal bleeding. Biopsy revealed a squamous cell carcinoma of the cervix, stage 3. She was referred to radiology for therapy, with excellent results. She remained well until October 1960. At this time she complained of pelvic pains. Examination revealed a hard, large, fixed mass in the pelvis which was thought to be a recurrence of her previous cancer. Because radiation could not be given her, she was explored, at which time a large uterus was found with a tumor mass in the anterior wall that measured 4 cm. in diameter. There was a large hematosalpinx of the right tube.

A total hysterectomy was done with removal of both tubes and ovaries. Within the uterine cavity was a large mass of old clotted blood. The pathological report stated that the tumor was a mesodermal sarcoma of the uterus. Her immediate postoperative convalescence was normal. She received several doses of thio-tepa intravenously. In November 1960, she developed hematuria. On cystoscopy a large metastatic tumor in the floor of the bladder was found from which she was bleeding. At this time efforts to control the bleeding with x-ray were unsuccessful. She was then given retrograde intra-femoral nitrogen mustard as a single large dose with compression of the thighs. She responded well for about two weeks. The bleeding recurred and she finally expired from obstruction to the ureters with uremia. Post-mortem findings indicated that the tumor was confined entirely to the bladder wall with ureteral obstruction.

Resume—The case demonstrates a metachronous malignancy occurring in the same organ but with two different types of tissue neoplasia.

Discussion

The terms predisposition or susceptibility to cancer have yet to be properly defined. Whether virus competing with the

host for DNA components, or chemical and hormonal initiating stimuli, or enzyme depletion deleting[61, 62] certain protein constituents through binding with carcinogenic substrates, are causes of cancer, each has its advocates. Each theory recognizes cancer as a systemic rather than a local disease. A suitable classification of the sites of multiple cancer may indicate the possibility of one of the above as a likely etiologic cause for cancer.

Summary

1. Multiple primary carcinoma is not a rare disease.

2. With improved surgical, radiological and chemotherapeutic results and longer time survivals, multiple primary carcinoma may be found more frequently.

3. A practical classification is suggested which will help locate such possible sites.

Acknowledgment. The author wishes to express his appreciation to Dr. Lawrence Swan of the Dept. of Pathology, of Our Lady of Lourdes Hospital for his assistance in the pathology of the cases reported, and to Miss Faye M. Kapsinow for her assistance.

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How to Judge the Quality of a Drug

There is no person alive who can take a bottle of pills, look at them, feel them, smell them and taste them and tell you whether or not they are of high quality. We all know that most people can pretty well determine the quality of textiles, and experts can tell exactly what the quality is by using ordinary senses. This is not so with drugs. I repeat the only way you can reasonably judge the quality of a drug is by relying on the reputation of the name on the label.—Joseph E. Snyder, M. D., Assistant Vice President, New York Presbyterian Hospital, to American Hospital Association.

Chemical Osteosynthesis*

• The conclusion reached was that because of the many complications encountered we do not recommend the future use of Ostamer®.

IRVING REDLER, M. D.†
G. GERNON BROWN, JR., M. D.†
New Orleans

SUCCESSFUL chemical osteosynthesis by means of a polyurethane polymer, Ostamer,‡ was first reported in 1958 by Mandarino and Salvatore. The material was produced by mixing a catalyst and a prepolymer at the time of surgery, and the resulting liquid polymer was poured into a previously prepared bone cavity at the site of desired fixation. The investigators stated that the material bonded to bone, set within fifteen to twenty minutes, and hardened sufficiently twenty-four to forty-eight hours later to permit immediate weight bearing and locomotion with safety. Their animal experiments demonstrated osteoblastic invasion and replacement of the material by host bone within eighteen to twenty-four months, and they predicted that a similar result could be expected in humans. No evidence of local or systemic toxicity was reported.

As described, this method of fixation appeared to offer numerous advantages over conventional orthopaedic methods. It would apparently provide for immediate and secure bone fixation thus permitting rapid locomotion and rehabilitation. Since this nontoxic material would be eventually replaced by bone, it would eliminate the necessity for obtaining bone grafts. Predicated on these assumptions, in February of 1959 we began a clinical study of the applicability and the efficacy of Ostamer fixation to a wide variety of orthopaedic conditions.

* Presented at the Eighteenth Annual Meeting of the Louisiana State Medical Society, Baton Rouge, May 3, 1960.

† From the Department of Orthopaedics, School of Medicine, Louisiana State University, New Orleans, Louisiana.

‡ A product of the Wm. S. Merrell Company, Cincinnati, Ohio.

Operations

We performed 51 operations on 42 patients, 8 of whom were children. The procedures consisted of 6 open reductions of fresh fractures, fixation of 3 pathologic fractures, 19 operations for delayed and nonunion of various bones, 3 osteotomies, the filling of a bone defect of the tibia, and 19 arthrodeses. The arthrodeses included 4 of the spine, 2 of the hip, 3 of the knee, 4 of the ankle, 5 of the subastragalar joint, and a solitary attempt at arthrodesis of a proximal interphalangeal joint of a finger.

The use of this material necessitated the development and employment of new operative techniques. In general, the basic operative procedure consisted in preparing an adequate bone cavity at the site of fixation, filling it with the liquid polymer while maintaining the position of the bone fragments until the material hardened. Tourniquets were employed wherever possible to produce a dry operative field since this was stressed by the manufacturer as a prerequisite for satisfactory bone fixation. The shaft lesions were fixed by removing adequate cortical strips from each fragment and filling the hollowed out medullary cavity with Ostamer. For the metaphyseal lesions, a cortical strip was removed from the diaphysis and the epiphysis was cavitated, the defect then being filled with the Ostamer. Later in our study, we made two modifications in this technique. When we discovered breakage of the Ostamer column in several of the shaft lesions, we adopted routine reinforcement of Ostamer with imbedded metal such as rods or plates. Additionally, the removed cortical strip was applied as an

onlay bone graft to afford further opportunity for bony union.

Our procedures for arthrodesis were based on the premise that new bone would rapidly invade the periphery of the Ostamer mass and ultimately replace it, permanently ankylosing the joint. Accordingly, the arthrodeses of the knee, ankle, subastragalar joint, and the interphalangeal joint of the finger were performed by hollowing the articular end of each component bone so as to form one large cavity that crossed the center of the joint and filling it with polymer. The arthrodesis of the hip was performed through a Smith-Petersen approach attempting to bond the Ostamer to prepared cavities in the femoral head and neck. Later, when doubt arose about the replacement of Ostamer by new bone in humans, pieces of cancellous bone were placed in contact with denuded portions of the joint surfaces so as to obtain direct bony union, the Ostamer serving purely as a means of internal fixation. For arthrodesis of the spine, the bone grafts were applied to the roughened laminae in conventional manner and the Ostamer was poured over the denuded and undercut spinous processes so as to bind them together and prevent any motion in this segment of the spine until union of the grafts occurred.

Preparation and Use

The proper preparation of Ostamer at the time of surgery required precision handling. After the materials were sterilized by autoclaving at 250 degrees Centigrade for ten minutes, exactly 14 cc. of the catalyst was added to the jar containing the prepolymer. With the chemicals maintained at a temperature not exceeding 100 degrees Fahrenheit, they were vigorously mixed by means of a wire beater inserted in a motorsaw that was rotated at maximum speed. Mixing was performed for exactly eight seconds.

This liquid polymer mix was immediately poured into the dried and prepared bone cavity. Setting usually occurred within five to seven minutes after pouring. Whenever a proper quality of the polymer mix was not obtained, it was discarded and a new batch was prepared. After pouring, if the mixture did not harden properly, it was removed by burring and curettage and a new batch was prepared and poured. In no case was the wound closed unless complete fixation of the bone fragments was demonstrated at the time of operation. The patients were then immobilized postoperatively by means of plaster of Paris or traction until the wounds were healed. Weight bearing or locomotion was only permitted after wound healing had occurred and there was clinical evidence of solid fixation of the bone fragments.

Evaluation of Results

Since our cases have been followed for a maximum of a little over a year, the only evaluation possible at this time is of the ability of Ostamer to maintain fixation until bony union by callus formation resulted. We have classified our results into three categories, successful, failure, and undetermined. A result was considered successful if there was x-ray evidence of bony union by callus formation, or was classified as a failure if any motion developed postoperatively at the site of fixation, even though union might eventually be obtained by continued prolonged external immobilization. The maintenance of fixation without x-ray evidence of union by callus was considered to be of an undetermined status, capable of uniting or of breaking at any time. Judged by these standards, eight of our cases have healed, twenty-eight have failed, and fifteen are still of undetermined status.

An analysis by groups reveals that 3 fresh fractures healed, and 3 failed. Of the 3 pathologic fractures, 2 involved the mandible and 1 the shaft of the humerus. Two failed and 1 was of undetermined status at the time of death. Four out of 22 nonunited and malunited fractures of the long bones healed, 12 were known failures, and 6 were undetermined at the time of this communication. The solitary bone defect of the tibia was a failure. Of the 19 arthrodeses, only 1 at the hip was suc-

cessful, 10 have failed to date and 8 are still holding but do not show any evidence of union by bone proliferation.

Investigation of our 28 failures revealed that they were caused by breakage of the Ostamer column at the point of fixation or loosening of the Ostamer mass from the walls of the bone cavity. The Ostamer column broke at the site of fixation in 6 out of the 28 cases. It occurred 3 times in the shaft of the tibia, in both cases of fracture of the neck of the femur, and once in the lower third of the ulna. Failures of this type were evidently due to the insufficient strength of the Ostamer itself. It should be realized that the quantity of material that can be introduced into the bone cavity is limited by the size of the medullary cavity and this cannot be significantly increased by operative technique. Since the strength of Ostamer varies directly with its cross section area, it should not be used without metallic reinforcement in bones with small sized medullary cavities.

The Ostamer mass loosened and pulled away from the walls of the bone cavity in 22 of the 28 cases. This type of complication results from failure of the Ostamer to adhere to bone.

A serious complication in the use of this material was the development of wound infection and draining sinuses in 16 of the 51 operations. Three wound infections occurred during the first postoperative week. Draining sinuses developed in 13 of the 16 cases after the wounds had healed per primum. In 8 of these 13 cases, drainage developed between the third and the seventh postoperative week. Five cases developed drainage between the second and the sixth month postoperatively. The initial exudate was straw colored and later became purulent. Cultures at this time revealed hemolytic staphylococcus aureus, coagulase positive. Once established, the drainage persisted and failed to respond to the usual therapeutic measures such as perfusion with specific antibiotics, excision of sinus tracts, removal of exposed portions of Ostamer and necrotic bone. Finally, in an effort to stop the drainage, we removed it from the infected cases. These wounds promptly healed or are in the process of healing. It was necessary to perform an above knee amputation in 1 patient because of the extensive infection and the futility of obtaining union.

In the course of this study, Ostamer specimens have been recovered from 19 patients and have been examined microscopically. These specimens were taken from areas of Ostamer that were in intimate contact with the bone cavity and from other areas within the center of the Ostamer mass itself. In practically every specimen that was taken from a bone contact area, there was some degree of fibroblastic proliferation within the superficial portions of the Ostamer. In 1 case, a pathologic fracture of the humerus due to multiple myeloma, the superficial Ostamer lucunae were found to have been invaded by the myeloma cells. No section has demonstrated any actual replacement of Ostamer by bone to date. Further microscopic studies will be continued to determine if this will occur in humans.

Summary

In summary, our experience with Ostamer fixation revealed that contrary to our original assumptions, breakage or loosening of this material could occur at any time. It was found that wound infection and draining sinuses once established did not stop in any case until the Ostamer was removed. This would indicate a foreign body reaction to the Ostamer itself. Our microscopic studies showed no osteoblastic invasion of the material to date even in children where rapid regeneration of bone is expected.

Until replacement of Ostamer by bone is demonstrated, Ostamer cannot be regarded as a plastic graft but only as another means of internal fixation. As such, and because of the numerous complications that we have encountered, we do not recommend its use.

However, because of its potential benefits, methods of chemical osteosynthesis

deserve continued careful and thorough investigation. Ostamer should be regarded as a possible prototype of other materials which may at some future date successfully combine greater strength and bonding ability to bone with the rapid replacement of the material by host bone and the absence of any local and systemic reactions. When such a material is found, the application of this method of chemical osteosynthesis in the field of orthopaedic surgery will be unlimited.



Legislative Strait Jackets in Medicine

Some of the suggestions (for "regulating" the prescription drug industry) could lead to such legislative strait jackets that the practicing physician would have no flexibility for individual judgment for his patients. More and more, medicine seems to be becoming a challenge to decide what not to do rather than what to do. If the trend continues the average doctor may worry more about how to extricate himself from a case with minimum personal risk than how to treat the sick person for maximum patient benefit.—Austin Smith, M. D., President, Pharmaceutical Manufacturers Association, to State Officers' Conference of American Academy of General Practice.

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Editorial

Officers of the Louisiana State Medical Society For the Coming Year

At its recent meeting in Monroe, May 7-9, the Louisiana State Medical Society chose officers for the coming year. The individuals selected are a credit to the stability and judgement of the organization. Those who are to guide the affairs of the Society are experienced, resourceful and informed about the various facets that pertain to physicians and their activities. It is seen in a survey of the list that all have busied themselves in various ways in behalf of the Society, are versed in the matters of public policy and the socio-political aspects of good medicine. The membership can look forward with confidence to the administration of the Society's business even though this is going to be a difficult year.

Our President is Dr. Ralph H. Riggs of Shreveport. He is known internationally for his attainments in the field of nasal surgery. His energy and ability to get things done is only matched by his wisdom and discretion. He has held most of the offices within the gift of the Society and in addition has served capably on many committees. It is much to the credit of the methods employed that those chosen for President, as exemplified by Dr. Riggs and also his predecessor, Dr. Cuthbert J. Brown, are experienced in the broad activities of organized medicine. Dr. Cuthbert J. Brown becomes Past-President. He continues as a member of the Executive Committee and will add wise counsel to its deliberations. The Society was quite vocal in its appreciation of his year of effort.

The First Vice-President is Dr. Jack T. Willis of Alexandria. He has been active in many ways in his local Society in which he has held various offices. He has served on committees for the State Society and has shown a breadth of view and appreciation of medical problems which will be most valuable in the councils of the Executive Committee.

The Second Vice-President is Dr. J. O. Weilbaecher, Jr. of New Orleans, who has been a member of the Board of the Charity Hospital in New Orleans, Past-President of the Orleans Parish Medical Society and a member of the Executive Committee of the State Society at various times. He is experienced in hospital administration and in the practice of Internal Medicine, both very creditably. His contributions to the Executive Committee will be valuable.

The Third Vice-President is Dr. Vincent J. Sampognaro of Monroe who has long been active in the interest of his local Society, has dutifully and properly carried out its wishes and was responsible for the details and precision arrangements which made the recent Monroe meeting of the Society so successful and pleasurable. Dr. Sampognaro will be most welcome in the councils of the State Society officers and the Executive Committee.

The Secretary-Treasurer is a friend of everyone and a stabilizing influence for all, Dr. C. Grenes Cole, to whom the organization, the physicians of Louisiana and the public which benefits from our efforts, owe a mounting debt of gratitude for his wisdom, guidance, resourcefulness and his years of devoted service.

The Chairman of the House of Delegates is Dr. Charles B. Odom of New Orleans whose earnest and capable endeavors make it possible for the House of Delegates to get through many items of business in a day and a half. His devotion to the interest of the House continues to be most commendable.

The Vice-Chairman is Dr. H. H. Hardy, Jr. of Alexandria who renders Dr. Odom continuous and valuable assistance in the meetings of the House and who renders the Society a never-ending service as Chairman of the Liaison Committee between the Society and the State Department of Public Welfare. As a spokesman from each organization to the other he knows what it is to be in the middle and to his great credit comes off with honors from each side.

As Councilor for the First District Dr. Nick Chetta of New Orleans was chosen. Dr. Chetta has been Coroner of the Orleans Parish for a succession of terms, has broad contacts in the many areas where the affairs of our organization touch those of the public and has a faculty in these relationships which will be most valuable.

The membership of the Council is otherwise unchanged and this body with its years of experience is able to serve most effectively the interests of our group. The membership of those committees which are elected by the House remains the same. One of the most important of these is the Committee on Public Policy and Legislation with Dr. Joseph A. Sabatier of Baton Rouge as Chairman. The extraordinarily successful work of this Committee in the years past and its continuance under such capable management as Dr. Sabatier gives, is a source of great satisfaction to the membersip.

The delegates and alternates to the House of Delegates of the American Medical Association are unchanged except that Dr. W. Robyn Hardy, Past-President of the State Society, is an alternate replacing Dr. E. L. Zander, deceased.

The membership of the Executive Committee which is composed of the officers and the councilors, is replete with stability and experience and the physicians of Louisiana are able to anticipate the strenuous year ahead with confidence.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

ABSTRACTED MINUTES
HOUSE OF DELEGATES
May, 1962

Minutes

Minutes of 1961 meeting of *House of Delegates*, approved as recorded.

Minutes of *Executive Committee* since 1961 meeting of House of Delegates, approved as recorded.

Special Order

Talk by *Senator Allen J. Ellender.*

Talk by Dr. Daniel Bergsma, *representative of National Foundation.*

Talk by Dr. Milton Davis, *Secretary, American Medical Political Action Committee.*

Roll of deceased members read.

Introduction of *new members of House of Delegates.*

Greetings from *representatives of Woman's Auxiliary* of State Society and AMA.

Message to *Mrs. J. E. Clayton* in re accident during meeting.

Review of medical care program under *Kerr-Mills Law.*

Review of activity of *Commission on Aging.*

Announcement of *scientific exhibit awards:* First place, Dr. Ralph H. Riggs; second place, Drs. Cary M. Dougherty and Gary A. Dildy and Nadalyn Cotten, B.A.

Announcement of special *Meeting of Shreveport Medical Society.*

Discussion of *Congressional election* in *Eighth Congressional District.*

Suggestion in re *utilization of Gulf Coast for future meetings* of Society; suggestion that special committee be appointed, referred to President.

Communications

Telegrams in re *opposition to King-Anderson type legislation* from Dr. J. Bruce Henriksen, Point Pleasant, New Jersey; Dr. George J. Hess, President, Association of American Physicians and Surgeons, Inc; Dr. Granville F. Knight, Speaker, House of Delegates, Association of American Physicians and Surgeons, Inc., Dr. Gunnar Gundersen, Chairman, Board of Directors, American Medical Political Action Committee.

Reports without Recommendations

Following *reports accepted as printed:* Secretary, Chairman of Council, *Councilors:* First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth Districts; *Committees:* Aid to Indigent Members, Alcoholism, American Medical Education Foundation (AMA-ERF), Arrangements—1962 Annual Meeting, Blood Banks, Budget and Finance, Child Health, Chronic Diseases, Committees, Congressional Matters, Diabetes, Domicile, Gamma Globulin and Salk Vaccine, Historian, Industrial Health, Insurance, Lectures for Colored Physicians, Liaison with Louisiana State Nurses Association, Mediation, Medical and Hospital Service in re Insurance Contracts, Medical Defense, Medical Education, Medical Testimony, Mental Health, National Emergency Medical Service, Neuropsychiatric Service at Charity Hospitals, Oil Painting of Dr. C. Grenes Cole, Public Health of the State of Louisiana, Revision of Charter, Constitution and By-Laws, Rural and Urban Health, Scientific Work, Tetanus Protection, Woman's Auxiliary.

Other reports containing no recommendations, accepted: Louisiana State Board of Medical Examiners, AMA Delegates, Public Relations Counselors, Legislative Consultant (data in re Louisiana State Board of Medical Examiners suit to again be published in Journal and in Capsules).

Reports with Recommendations

President: Report referred to Committee on President's Report and report of this Committee, recommending adoption of following recommendations of the President, was accepted: 1. The Society publish a medical directory listing the names, addresses, specialties or particular areas of practice of every member. This directory to be completely revised and re-published every five years. In addition, a supplement be issued annually to list the names of new members, deceased members, and for the purpose of changing addresses where necessary. 2. The Society give unanimous endorsement to the American Medical Political Action Committee, and urge every member to contribute to the support of this organization. 3. The House of Delegates adopt a resolution condemning the King-Anderson Bill or any similar version thereof and that copies of this resolution be sent to every Louisiana Congressman and to every member of the House Ways and Means Committee. 4. The Society continue the valued services of our Legislative Consultant and our Public Relations Counselors who have performed such valuable work during the past seven years. 5. A special committee be appointed by the President to study and make recommendations on prepaid medical insurance plans. 6. The Society lend its complete support to the American Medical Education and Research Foundation and encourage high school students to investigate

medical careers. 7. House of Delegates consider creation of Reference Committees.

Past Presidents Advisory Council: 1. Committee of the House be appointed to study feasibility of the use of certain special funds presently inactive in rendering assistance to medical students and that the report be returned to the House of Delegates: adopted. 2. Entire matter of relationships between the trustees of the Rudolph Matas Trust and the Society be referred to the legal department for full review, legal interpretation and clarification: adopted. 3. House of Delegates asked to reaffirm its endorsement of the Kerr - Mills Law and program: adopted. 4. House of Delegates asked to disapprove the King-Anderson proposals and/or any similar proposal involving the Social Security program in providing or financing of medical care: adopted. 5. Suitable condolences be sent to the family of Dr. Stephen M. Blackshear who expired on May 6, 1962: adopted. 6. All resolutions relative to socialization, excluding the Kerr-Mills Law and program, be referred to a special committee of the House of Delegates, appointed by the President, for immediate and continuing study, with the recommendations of the committee to be returned to the House: adopted. 7. Recent action of the Commission on Aging of Louisiana, endorsing the Social Security System financing medical care, be recognized and that a resolution of regret for such action and review of the activities of members of this Society in promoting their program be forwarded to the Commission: adopted. 8. Printing of the addendum to the medico-legal code be financed by the Society: adopted.

Committee on Accreditation of Hospitals: 1. Consideration be given to discontinuing this Committee as an activity of the Society: Referred to Committee on Committees.

Cancer Commission: 1. Component parish and district medical societies which have unorganized or inactive cancer committees be urged by the Louisiana State Medical Society to take appropriate action to bring cancer control functions to the high level which has been attained in several parishes and districts: approved. 2. Component societies, other medical societies, and medical schools in Louisiana be requested to set up appropriate committees or other mechanisms to provide for scrutinizing news releases concerning new or unorthodox views relative to cancer: approved. 3. Members of the Louisiana State Medical Society continue to be alert to the intrusion of chiropractors and other cultists and that they report their observations to the Cancer Commission of the Louisiana State Medical Society as well as to the Louisiana State Board of Medical Examiners: approved with omission of "chiropractors and other". 4. Amount of Five Hundred Dollars ($500.00) be budgeted for use, if necessary, by the Cancer Commission for carrying out its various functions during the coming year: referred to Committee on Budget and Finance; recommendation of Budget and Finance Committee to approve $500.00 appropriation, adopted.

Committee on Department of Public Welfare (Advisory Committee): 1. This Committee be allowed to continue work as authorized by the House of Delegates at previous meetings: approved.

Committee on Establishment of Hall of Fame of Medicine: 1. It is recommended most heartily that this Committee be continued: approved.

Committee on Federal Medical Services: 1. Continue support of Kerr - Mills Law: approved. 2. Reaffirm the policy that medical care of service-connected injuries and illnesses is the primary responsibility of the Veterans Administration and that federal medical care be limited to such a policy: approved. 3. Continue strong opposition to King-Anderson type legislation: approved. 4. Support the formation of an active medical civil defense organization in every parish and large city in the State, headed by a practicing physician, preferably with wartime military experience: approved. 5. All physicians in the State be urged to assist their medical civil defense directors in training of professional and allied lay persons in the special problems of mass disaster through the medium of Casualty First-Aid Courses: approved.

Committee on Geriatrics: 1. Continue to give full support to the Kerr-Mills Law and do everything possible to defeat the King-Anderson Bill, especially by writing to Congressmen and to Mr. Wilbur Mills: approved.

Committee on Hospitals: 1. Members acquaint themselves with the Hospital Licensing Law (Act 90 of 1961) and minimum standards, rules and regulations submitted by the Hospital Licensing Council and make their sentiments known to the State Society representative on the Hospital Licensing Council: approved; (after discussion concerning representation on Hospital Licensing Council).

Committee on Journal: 1. Re-election of Dr. Edwin H. Lawson and Dr. M. D. Paine as members of the Committee on Journal: referred to Nominating Committee and recommendation of that Committee for re-election of these members, approved.

Committee on Liaison with Louisiana Hospital and Nurses Associations: 1. The State Society continue the policy of participating in conferences with these associations: approved.

Committee on Liaison with Louisiana State Bar Association: 1. Printing of 6,000 copies of the Interprofessional Code for Physicians and Attorneys be arranged by this Committee as soon as possible and paid for by the Louisiana State Medical Society: withdrawn (taken care of by

Bar Association). 2. Continuation of the Committee with no changes in the membership: approved, with omission of "with no changes in the membership".

Committee on Louisiana Organizations for State Legislation: 1. This Committee be kept informed concerning legislation being considered by the Louisiana State Medical Society: approved.

Committee on Maternal Welfare: 1. The Committee on Maternal Welfare cooperate with the American College of Obstetricians and Gynecologists in a program of standardization of maternal and perinatal mortality nomenclature and follow-up study of maternal mortality for the State of Louisiana: approved. 2. The Budget and Finance Committee allocate $1,000.00 to this Committee to initiate such a program and for energizing the Committee on Maternal Welfare: referred to Committee on Budget and Finance; $250.00 appropriation recommended by the Committee on Budget and Finance approved.

Committee on Public Policy and Legislation: 1. Continue efforts in counseling the Louisiana Chapter of the American Physical Therapy Association in drafting their bill which would license physiotherapists under the Louisiana State Board of Medical Examiners: withdrawn. 2. Continue efforts in offering counsel to the Louisiana Atomic Energy Committee in drafting the Atomic Energy Act: approved. 3. Continue efforts to inform the public regarding the danger of chiropractic as well as concentrated political action against licensure of chiropractors: approved. 4. Continue efforts to secure passage of the "Good Samaritan Law" when finally drafted: approved. 5. (included in supplemental report) Endorse appointment of a veterinarian on parish boards of health when available: approved.

Committee on Resolutions: 1. A copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.

Committee on State Government Health Services: 1. Appointment of an advisory committee from the State Medical Society to Vocational Rehabilitation: approved. 2. State Medical Society inform the Little Hoover Commission of views of the Society in regard to medical supervision of the medical program: approved. 3. Approval of efforts of this Committee to promote investigation by the Public Affairs Research Council: approved. 4. Continuation of this Committee: approved. 5. (included in supplemental report) This Committee to work toward the development of one health agency under medical supervision for direction of all health programs: approved.

Committee on State Hospital Policies and Medical Indigency: 1. The Louisiana State Medical Society, when requested, cooperate, when feasible, in the residency training program of the State Charity Hospitals: withdrawn.

Council on Medical Service and Public Relations: 1. Continue and intensify all efforts in the current campaign to combat legislation which would include medical and health care in the Social Security system: approved. 2. As part of the program to combat cultism and quackery, conduct a Society sponsored conference on quackery: approved. 3. Publish a revised edition of the Society's Legislative Directory for members of the press, radio and television: approved. 4. Continue the Society's medical career program: approved. 5. Place health exhibits for laymen at three suitable parish fairs: approved. 6. Lend full assistance to efforts being made to organize the Louisiana Medical Political Action Committee: approved.

Resolutions

Orleans Parish Medical Society—in re hypnosis: adopted as follows: "Whereas the Council on Mental Health of the American Medical Association, under the chairmanship of Dr. M. Ralph Kaufman, has for two years studied the medical use of hypnosis, and

"Whereas, the conclusions of this council's report in substance was that there are definite and proper uses of hypnosis in medical and dental practice, and

"Whereas, this report was approved by the Board of Trustees and the House of Delegates of the American Medical Association at its June 1958 meeting in San Francisco, and

"Whereas, no precedent has been set in the State of Louisiana and Orleans Parish in particular, because there has been no legal litigation or even pending legal litigation concerning the use of hypnosis in medical practice, and

"Whereas, precedent, as to accepted medical practice, is set by the medical practice of a given community, and

"Whereas, the Orleans Parish Medical Society has the privilege and duty to set medical standards;

"Be it resolved, That the Orleans Parish Medical Society accept the findings and decisions of its mother organization, the American Medical Association, and accept hypnosis in the light of the Congress of Delegates of the American Medical Association.

"Therefore, We, the Orleans Parish Medical Society, go on record as accepting hypnosis as a tool in the practice of medicine in our area and also that the Orleans Parish Medical Society inform the House of Delegates of the Louisiana State Medical Society of its action and recommend that they pass a similar resolution."

Shreveport Medical Society—in re socialized medicine: adopted as follows: "Whereas physicians of the Louisiana State Medical Society, guided by professional standards and under

America's free enterprise system, are now providing good medical care for all of its citizens, and

"Whereas the King-Anderson Bill, or similar type legislation seeking to place medical care for the aged under Social Security taxation, would impose a tremendous payroll tax increase; would be compulsory; would open the door to inefficiencies and defects inevitable in the administration of welfare programs administered by the Federal Government; would result in politically controlled medicine of decreased quality; would finance medical care for some aged regardless of need, while denying it to others in real need; would injure the patient-physician relationship; and

"Whereas mandatory vendor (third party) payment to physicians for medical services will result in government controlled medicine (socialized medicine); and

"Whereas with politically controlled medicine history proves that the patient and the physician no longer determine the quality or quantity of medical care; and

"Whereas King-Anderson type medical care is Socialized Medicine capable of indefinite expansion to cover the entire population; and

"Whereas physicians of Louisiana love their country and are dedicated to the preservation of this Nation as a Republic, governed by our Constitution and Bill of Rights; and

"Whereas physicians feel that personal freedom for their patient and themselves is one thing that is not subject to arbitration; Now, Therefore be it

"Resolved, that the members of the Louisiana State Medical Society are opposed to any system or plan to socialize medical care directly or indirectly, and will not participate in the implementation of the King-Anderson Bill, or similar type legislation which would effect federal control of medical care of the aged, or any other large segment of the population, and be it further

"Resolved, that we as individual physicians are opposed to any system of medical care in which the patient-physician relationship is disturbed to the extent that the patient does not have freedom of choice of physician; or that the physician does not have full control of the medical care of the patient; or that the patient does not have full administration and control of the funds available for the payment of such medical services, with the exception of the present implementation in Louisiana, on a trial basis, of the Kerr-Mills Law; and be it further

"Resolved, that the Louisiana State Medical Society is opposed to the socialization of any segment of our people; that we as individuals will not participate in any programs of this type and that we as individuals pledge to give our help to others in their fight against Socialism; and be it further

"Resolved, that this resolution in no way implies that the members of the Louisiana State Medical Society will at any time refuse to treat the aged—to the contrary—they will be treated, *regardless* of financial return; and be it further

"Resolved, that a copy of this resolution be sent to the Governor, each member of the State Legislature, to the United States Senators and Representatives from Louisiana, to appropriate committees in Congress, to the House of Delegates of the American Medical Association, and appropriate news media, at whatever time the Executive Committee of the Louisiana State Medical Society considers appropriate."

"*Ouachita Parish Medical Society*—in re payment to physicians under Kerr-Mills Law: adopted, as follows: "Whereas, there is apparently a requirement by the Federal Government that funds allocated for medical care be positively disbursed for same, and that the method of disbursing of funds so allocated as described in Resolution will insure that this requirement be met.

"Whereas, the Medical Profession is in favor of planned medical care for the needy aged as incorporated in the principles of the Kerr-Mills Law; and

"Whereas, according to present interpretation, vendor payment by an implementing agency is thought to be an integral part of this law; and

"Whereas the principal intent of the law is one of assistance to the patient rather than the doctor; and

"Whereas interpolation of any factor between the patient and the doctor of his choice is detrimental to the patient-doctor relationship and thereby detrimental to good medical care; now, therefore be it

"Resolved that the physician provide an itemized statement of charges for each eligible recipient of Medical Aid to the Aged or Old Age Assistance; and be it further

"Resolved that this statement be authenticated by an identifying stamp to be issued to each physician; and be it further

"Resolved that the payment for any portion of these charges for which the implementing agency is responsible be initiated by the patient's presentation of such an authenticated statement together with his identification card to the said agency; and be it further

"Resolved that the implementing agency will issue checks made payable to both patient and physician for that portion of the charges for which it is responsible; and be it further

"Resolved that these checks be forwarded to the patients who in turn will use said checks as partial or full payment of these charges according to his private arrangements with the physician."

Ouachita Parish Medical Society—in re King-Anderson Bill: withdrawn.

"Whereas, the physicians of the Ouachita Parish Medical Society, guided by professional standards and under America's free enterprise system, are now providing good medical care for all citizens; and

"Whereas the King-Anderson Bill or any similar type legislation seeking to place medical care for the aged, regardless of need, under Social Security taxation, would injure the patient-physician relationship and would finance medical care for some and yet deny it to others; and

"Whereas, the King-Anderson Bill, or similar government type legislation under Social Security taxation would impose a tremendous payroll tax increase and would open the door to inefficency and defects inevitable in the administration of welfare programs by the Federal Government; and

"Whereas, King-Anderson type legislation would result in a type of Medicine that would be of decreased quality and yet more costly than that available through voluntary methods; now therefore be it

"Resolved that the members of the Ouachita Parish Medical Society continue their vigorous opposition to King-Anderson type legislation for medical care; and be it further

"Resolved that we, the members of the Ouachita Parish Medical Society will not participate in or implement any system or plan to socialize medical care directly or indirectly; and be it further

"Resolved that we as individual physicians are opposed to any system or plan of medical care in which the patient-physician relationship is disturbed to the extent that the patient does not have freedom of choice of physician; or to the extent that the physician does not have full control of the entire medical care of the patient; or to the extent that the patient does not have full administration and control of the funds available for the payment of such medical services; and be it further

"Resolved that the Ouachita Parish Medical Society does not endorse any socialization of any kind in any form; that we as individuals will not participate in any program of this type; and be it further

"Resolved that each program or plan, whether governmental or otherwise, present, past, or future, shall be studied by a committee of the Ouachita Parish Medical Society, which will report its findings to each member physician who shall then determine whether he will participate."

Ouachita Parish Medical Society—in re medical jurisprudence: tabled.

"Whereas it is in the public interest and that of the aged that medical judgment be exercised by qualified doctors of medicine in the administration of medical care for the aged under Public Law 86-778 Title VI (Medical Services for the Aged) as it pertains to administration in the State of Louisiana and

"Whereas the authority to exercise medical judgment is at the present vested in persons other than qualified doctors of medicine in the administration of medical care for the aged under Public Law 86-778 in the State of Louisiana, therefore, be it

"Resolved that we instruct our delegates to the Louisiana State Medical Society meeting of 1962 to caucus with other delegates prior to the meeting in order to secure the passage of a resolution by the Louisiana State Medical Society to the effect that it will take every measure possible to obtain the passage of legislation by the State Legislature which will insure that the authority of medical jurisprudence is placed in the hands of qualified doctors of medicine and

"Resolved that our delegates will be instructed to caucus in order to secure a resolution by the Louisiana State Medical Society which will seek to obtain the passage of legislation by the State Legislature constituting a policy making Board of Medical Authority composed of qualified doctors of medicine which will have as its purpose, the final authority in laying down medical policy and the administration of medical jurisprudence for whatever agency the State chooses to administer Public Law 86-778, and further, that this Board be responsible to and the responsibility of the Louisiana State Medical Society which will form this Board by democratic elections from the state organizations of the various medical specialties or where none exists, by appointment to include a member from the following disciplines: 1. General Practice. 2. Surgery. 3. Orthopedics. 4. Internal medicine. 5. Obstetrics and gynecology. 6. Neuropsychiatry. 7. Pediatrics. 8. Radiology. 9. Pathology. 10. Dermatology, and any other medical specialty which desires representation."

Councilor of the Eighth Congressional District (approved by the Rapides Parish Medical Society)—in re voluntary medical and surgical insurance: adopted after amendment to reserve right to rescind approval at any time in the future.

"Whereas the American Medical Association and the National Blue Shield Plans have engaged in an endeavor to provide medical and surgical insurance for the elderly citizens of the United States on a voluntary basis, and

"Whereas the Louisiana State Medical Society favors voluntary enrollment and voluntary participation of all persons in providing for their medical needs, and is opposed to compulsion such as would be incurred under the King-Anderson Social Security approach, and

"Whereas the Louisiana Hospital Service, Incorporated, and The Hospital Service of New Or-

leans, Louisiana, Incorporated, provide means of voluntary non-profit Medical and Surgical Insurance in connection with their Hospitalization insurance coverage, and

"Whereas to give the extended coverage as outlined and recommended by the American Medical Association and National Blue Shield Plans, it is necessary that the Louisiana State Medical Society give its approval to the Louisiana Hospital Service, Incorporated and the Hospital Service of New Orleans, Louisiana, Inc., as an acceptable agency to provide voluntary non-profit Medical and Surgical Insurance;

"Therefore, Be It Resolved: That the Louisiana State Medical Society hereby approves of the Louisiana Hospital Service, Incorporated and the Hospital Service of New Orleans, Louisiana, Incorporated, as suitable agencies for providing prepaid voluntary Medical and Surgical Insurance."

Jefferson Parish Medical Society—in re opposition to laboratories, operated by individuals other than doctors of medicine: adopted with deletion of "the U. S. Bio-Chemical Laboratory or any similar laboratory", as follows: "Resolved that the members of the Louisiana State Medical Society refrain from sending laboratory work to any laboratory that is operated by individuals other than doctors of medicine, as these laboratories are being operated in violation of the Medical Practice Act of this State."

Orleans Parish Medical Society—in re vehicle license plates: referred to the Committee on Public Policy and Legislation: "Our Committee feels that the statewide use of a code letter or letters on the vehicle license plate, as urged by our Committee last year, similar to those used in many other states, would do much to identify us in the request for special privileges of parking, traveling, etc. We emphasize and urge that this matter be brought before the House of Delegates at the next statewide meeting."

Chairman of Louisiana Medical Political Action Committee—in re endorsement of LAMPAC; adopted, as follows: "Whereas, American Medicine is faced today with ever increasing political activity directed toward establishing some form of a federally controlled medical program, and

"Whereas, local and state groups of physicians, separate in organization from their respective medical associations; banded together locally to resist that effort find themselves woefully inadequate to present their attitudes on a level competitive with the opposition, and

"Whereas, it is recognized that even though the American Medical Association and several state medical associations are conducting accelerated public educational programs, the local instrumentation of political activity needs strengthening; therefore be it

"Resolved, that the Louisiana State Medical Society does hereby endorse and approve the Louisiana Medical Political Action Committee and its purposes, and urges all physicians and their families in the State of Louisiana to join, support, contribute to, and work toward the success of the Louisiana Medical Political Action Committee and its objectives; and be it further

"Resolved, that in view of the national and Federal aspects of many political issues, political education, and effective political action, the Louisiana State Medical Society does hereby endorse and approve the American Medical Political Action Committee and urges all physicians of this State to join, support, contribute to, and work toward the success of AMPAC and its objectives; and be it further

"Resolved, that the Louisiana State Medical Society does hereby urge the Louisiana Medical Political Action Committee and the American Medical Political Action Committee to work together and to cooperate to the greatest extent possible so as to accomplish in the most effective manner, the political aims and objectives of the physicians of this State and of this Country for the greater benefit of Medicine, the public health and all our citizens."

Other Action

Recommendation of Executive Committee for appointment by the President of a special committee to investigate employment of an *executive assistant to the Secretary-Treasurer* and report to the Executive Committee for final action: approved.

Tax laws applicable to professions: referred to Committee on Public Policy and Legislation.

Proposed Act in re Ionizing equipment: withdrawn and no action taken.

Election of Officers, Delegates and Alternates to AMA and Committees

President-elect—Dr. George H. Hauser, New Orleans

First Vice-President—Dr. J. T. Willis, Alexandria

Second Vice-President—Dr. J. O. Weilbaecher, Jr., New Orleans

Third Vice-President—Dr. V. J. Sampognaro, Monroe

Secretary-Treasurer—Dr. C. Grenes Cole, New Orleans

Chairman, House of Delegates—Dr. Charles B. Odom, New Orleans

Vice-Chairman, House of Delegates—Dr. H. H. Hardy, Jr., Alexandria

Councilor, First District—Dr. Nicholas J. Chetta, New Orleans

Councilor, Second District—Dr. J. E. Clayton, Norco

Councilor, Fourth District—Dr. C. E. Boyd, Shreveport

Councilor, Fifth District—Dr. Henson S. Coon, Monroe

Alternate Delegate to AMA—1962—Dr. W. R. Hardy, New Orleans

Delegates to AMA 1963 and 1964—Dr. P. H. Jones and Dr. Arthur D. Long

Alternate Delegates to AMA 1963 and 1964—Dr. W. R. Hardy and Dr. R. T. Lucas

Committee on Committees: Dr. J. Kelly Stone, New Orleans, Chairman; Dr. Rhett McMahon, Baton Rouge and Dr. H. Ashton Thomas, New Orleans.

Committee on Journal: Dr. Edwin H. Lawson and Dr. M. D. Paine; both of New Orleans.

Committee on Medical Defense: Dr. W. A. Ellender, Houma.

Committee on Public Policy and Legislation: Dr. Joseph A. Sabatier, Jr., Baton Rouge, Chairman; Dr. N. J. Chetta, New Orleans; Dr. J. E. Clayton, Norco; Dr. Leo J. Kerne, Thibodaux; Dr. C. E. Boyd, Shreveport; Dr. E. J. Brown, Monroe; Dr. Jack Thielen, Lake Charles; Dr. F. P. Bordelon, Marksville.

Committee on Scientific Work: Dr. Sam Hobson, New Orleans and Dr. S. L. Gill, Shreveport.

Future Annual Meetings

Dates and Places: 1963—New Orleans, May 6-8; 1964—Lafayette, May 4-6; 1965—New Orleans, May 3-5.

COMMITTEE ON MEDICAL DEFENSE

It is very gratifying to report that this Committee has not had very many matters referred to it during the past year. Only two cases were submitted for approval of defense and although the Attorney for the Society has been advised of this approval there has been no further action in the matters.

Inquiries are received by the Secretary-Treasurer from time to time concerning defense and information concerning procedure as outlined in the By-Laws is always furnished.

C. B. Erickson, M. D., Chairman

REPORT OF COMMITTEE ON RESOLUTIONS

The members and guests in attendance at the 1962 Annual Meeting of the Louisiana State Medical Society held in Monroe May 7-9 wish to acknowledge, with thanks, assistance rendered by the following individuals and groups:

Dr. John P. Burton, President; Dr. Henson S. Coon, Honorary Chairman, Dr. V. J. Sampognaro, Acting Chairman, personnel of Committees on Arrangements and all members of the Ouachita Parish Medical Society, hosts to the meeting.

Senator Allen J. Ellender, for his most interesting and enlightening talks before the House of Delegates and Opening Session of the Meeting.

Rev. W. Alan King who offered the invocation at the official opening meeting of the Society.

Hon. W. L. Howard, Mayor of the City of Monroe, for his cordial welcome to the city.

The Chairmen of the various scientific sessions for the excellent program arranged and the following out-of-state guests who participated in the scientific program:

Dr. F. Tremaine Billings, Jr., Nashville, Tennessee

Dr. William Ross Eyler, Detroit, Michigan

Dr. J. Lynwood Herrington, Jr., Nashville, Tennessee

Dr. John P. McGovern, Houston, Texas

Dr. James H. Steele, Atlanta, Georgia

The Monroe papers as well as the press throughout the State for publicity prior to and during the time of the meeting.

Radio and TV stations in Monroe and throughout the State, for excellent cooperation in broadcasting specific phases of the meeting.

The Virginia and Frances Hotels for excellent services rendered members attending the meeting, as well as facilities for various sessions in connection with the meeting; also the Penn Resort Hotel and motels in Monroe for accommodations furnished.

The Catholic Physicians Guild of Monroe for arranging a Memorial Mass in memory of those members of the Society who died during the past year.

Mr. Paul J. Perret and Mr. Paul R. Kalman, Jr., who have rendered a most valuable service prior to and during the meeting as Public Relations Counselors in securing publicity for the meeting; also for their report presented to the House of Delegates.

Mr. Percy J. Landry, Jr., Legislative Consultant, who has continued to be most helpful to the medical profession, for his informative talk before the House of Delegates.

Scientific exhibitors whose exhibits add much interest to the meeting.

Pharmaceutical, surgical and other companies and organizations for their continued cooperation in having technical exhibits.

All companies which purchased space for advertising in the Program.

The Bayou DeSiard Country Club for facilities furnished for the golf tournament.

The Pioneer Hills Gun Club for skeet and trap shooting facilities made available to members of the Society.

Dr. Edwin H. Lawson, Secretary of the Louisiana State Board of Medical Examiners for his report submitted to the House of Delegates.

Officers and members of the Woman's Auxiliary who prepared an interesting program for the members of the Auxiliary and assisted in arranging social activities for members of the Society and their wives.

Dr. C. J. Brown, who has served so capably during the past year as President of this organization.

The Past Presidents Advisory Council for re-

port to the House of Delegates and their continued active interest in the organization.

Dr. Charles B. Odom, Chairman of the House of Delegates.

Dr. C. Grenes Cole, Secretary-Treasurer, who has continued to render invaluable services to the organization.

Miss Annie Mae Shoemaker, Assistant Secretary-Treasurer and the entire secretarial staff for their efficient handling of details prior to and during the time of the meeting.

Recommendation

It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.

E. G. DUREL, M. D., Member
E. F. WORTHEN, M. D., Member
SAM HOBSON, M. D., Chairman

CHICAGO MEETING AND AMPAC

Sen. John G. Tower of Texas, and Rep. Harold B. McSween of Louisiana will be two of the top speakers at the $25-a-plate banquet given by the American Medical Political Action Committee Sunday, June 24th, at 7 p.m. in the Grand Ballroom of Chicago's Palmer House.

Physicians and their wives, as well as others interested in political education and action by the medical profession, were urged by Dr. Gunnar Gundersen, AMPAC's chairman, to attend the banquet and participate in other activities scheduled for the day. Dr. Gundersen said more than 750 persons were expected to join Sen. Tower and Rep. McSween at dinner, reservations for which are now being made through AMPAC, 520 N. Michigan Ave., Chicago 11, Ill.

"Many physicians and their wives who had planned to arrive Monday for the AMA's 111th Annual Meeting have now re-arranged their schedules to arrive Saturday or Sunday," Doctor Gundersen said, "The profession is fast awakening to the need for effective, concerted political action. This is evidenced by the snowballing support being given state political action committees and AMPAC itself.

"The program scheduled in Chicago is arousing unusual interest, and we believe that those who take part in the activities scheduled will find their time well spent."

After a closed breakfast meeting of AMPAC's National Advisory Committee, at which a representative of every state will be present, a working session on political education and action —from 9:30 a.m. until noon—will be opened to physicians, their wives, and others. Nationally prominent speakers will address the group on subjects of immediate political importance.

Dinner will conclude the day's program.

Sen. Tower is the first Republican to be elected to the Senate from Texas since Reconstruction, and the only Republican Senator ever elected by popular vote from any of the former Confederate states. He is the only Senator to serve on the influential Senate Republican Policy Committee during his first term, and also functions as a member of the Republican Senatorial Campaign Committee.

Sen. Tower fills the seat vacated by Lyndon Johnson, now Vice President. A former professor of political science, Sen. Tower is assigned to two major Senate Committees—Banking and Currency, and Labor and Public Welfare.

Rep. McSween was elected to the 86th and 87th Congresses from the Eighth District of Louisiana. A Democrat, he practiced law prior to entering public life. He is a member of the House Committee on Agriculture.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

COMING MEETINGS

1962 Scientific Session, American Cancer Society, Biltmore Hotel, New York City, October 22-23. Theme: The Clinical Impact of a Quarter Century of Cancer Research.

Fifteenth Koppa Conference on Pulmonary Diseases, September 6-9, 1962, Camp Waldemar, Hunt, Texas. Wayne E. Reser, M. D., 1504 8th Street, Wichita Falls, Texas, Invitation Chairman.

Twenty-eighth Annual Meeting, American College of Chest Physicians, Chicago, June 21-25, 1962, Morrison Hotel; Interim Session, Los Angeles, November 24-25, 1962, The Ambassador Hotel; Seventh International Congress on Diseases of the Chest, New Delhi, India, February 20-24, 1963.

NOT ONLY RUSTY NAILS

Protection against Tetanus or lockjaw as it is often called is so simple, safe and effective. Yet an average of about twelve cases occur each year in the New Orleans Area, half of which are fatal.

Tetanus is a disease caused by a germ which grows best at the site of injured body tissues, particularly if the wound is contaminated with dirt. As the germ grows and spreads in the body it liberates a deadly toxin or poison which is carried along nerves to the brain. There it produces the picture of lockjaw with stiffness of the jaw and other muscles, convulsions and finally death due to asphyxia.

Protection against the disease is obtained by taking a series of Tetanus Toxoid shots. Booster shots given at the time of injury or at regular intervals can provide permanent protection.

Lockjaw serum which is different from toxoid is given only after injuries occur and protects only for a short time. Persons allergic to the serum may have dangerous reactions to this type of treatment.

Tetanus may result from any break in the skin —large or small. It does not occur only from puncture wounds with rusty nails. Practically all veterans and teen-agers now have had this type of protection while in service or school. A booster shot now would provide continued and perhaps life-saving protection from this disease.

Every athlete, gardener, laborer, do-it-yourself handy man, everyone who drives a car, indeed everyone should obtain protection against tetanus now. The Orleans Parish Medical Society, the New Orleans Health Department and the Louisiana State Board of Health urge all persons to consult their doctor about Tetanus Toxoid shots now.

PAP TEST DISCOVERER ON PROGRAM OF AMA ANNUAL MEETING

PAP TEST DISCOVERER ON PROGRAM OF AMA ANNUAL MEETING

Dr. George N. Papanicolaou, world-renowned father of exfoliative cytology and discoverer of the "Pap smear test" for detecting cancerous and pre-cancerous cells, will appear on the program of the Annual Meeting of the American Medical Association June 24-28 in Chicago.

Dr. Papanicolaou retired recently as director of the Papanicolaou Research Laboratory at Cornell University Medical College in New York, where he served on the faculty for 48 years.

The Pap smear test is credited directly with saving the lives of thousands of women. It enables the practicing physician to carry out a simple, inexpensive diagnostic test which reveals cancerous cells from the uterus. The test is now routinely carried out on all women patients by many physicians, and deaths from uterine and cervical cancer already have been cut in half in the United States.

Dr. Papanicolaou presently is director of the newly organized Cancer Institute of Miami, in Florida.

NUCLEAR MEDICINE TO BE FEATURED AT AMA MEETING

The American Medical Association and the Atomic Energy Commission will be joint sponsors of a special joint meeting on Nuclear Medi-

cine at the 111th annual meeting of the AMA at Chicago June 24-28.

Theme of the overall annual meeting will be "Medicine in the Atomic Age." All sessions and exhibits will be concentrated in Chicago's giant new auditorium and convention hall, McCormick Place, on the shore of Lake Michigan.

"The nuclear age already has begun to bring many changes and innovations to the practice of medicine," said Dr. Samuel P. Newman of Denver, chairman of the AMA's Council on Scientific Assembly.

"The program of the special joint meeting at the Chicago meeting is designed to enable the physician in practice to bring his knowledge of available nuclear diagnosis and therapy up-to-date," Dr. Newman said.

Dr. Lee Edward Farr of Brookhaven National Laboratory, Upton, New York, a member of the Council on Scientific Assembly, is serving as coordinating secretary for the session on Nuclear Medicine. Participating Sections are Internal Medicine; General Surgery, and Radiology.

Another major aspect of the Chicago meeting will be a special half-day general session on Mental Health. It will be sponsored jointly by the AMA's Council on Scientific Assembly and on Mental Health, with Dr. John E. Adams of San Francisco as coordinating secretary. Participating sections are nervous and mental diseases; general practice, and internal medicine.

A general session will be offered on Teenagers' Problems encountered in medical practice. Coordinating secretary is Dr. James L. Dennis of Oakland, Calif. Participating sections are Pediatrics; Nervous and Mental Diseases; Obstetrics and Gynecology; Urology; Dermatology, and Orthopedic Surgery.

Inflammatory and Ulcerative Diseases of the Small Intestine will be the theme of another half-day general session, under the direction of Drs. Clyde A. Stevenson of Spokane, Washington and G. Gordon McHardy of New Orleans as coordinating secretaries. Participating sections will be Radiology; General Surgery; Internal Medicine; Gastroenterology and Proctology, and Pathology and Physiology.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY TWENTY-SIXTH ANNUAL MEETING

The twenty-sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 4-7, 1963, headquarters at The Roosevelt Hotel.

The following officers and members of the Executive Committee have been elected for this year:

Dr. Ralph M. Hartwell, President
Dr. W. E. Kittredge, President-elect
Dr. John G. Menville, First Vice-President
Dr. Lee D. McLean, Second Vice-President
Dr. N. Leon Hart, Third Vice-President
Dr. Mannie D. Paine, Jr., Secretary
Dr. Samuel R. Staggers, Treasurer
Dr. Gilbert C. Tomskey, Director of Program
Dr. Jason H. Collins, Assistant Director of Program
Dr. Daniel C. Riordan, Assistant Director of Program

Members of the Executive Committee include Doctors Barrett Kennedy (retiring President), L. Sidney Charbonnet, Jr., Jack E. Strange, Louis A. Monte, and Simon V. Ward.

AMERICAN BOARD OF OBSTRETICS AND GYNECOLOGY

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for re-examination in Part II are now being accepted. All applications and requests for re-examination are to be received in the Office of the Executive Secretary and Treasurer on or before the deadline date of **July 1, 1962.** No applications will be accepted after that date.

Candidates are urged to review the current Bulletin of the Board, which may be acquired by writing to the Executive Secretary, in order that they be well informed of the present requirements prior to submitting application.

After July 1, 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training for admission to the examinations. After this date, training by Preceptorship will not be acceptable.

Diplomates of this Board are urged to notify the office of the Executive Secretary of a change in address.

Office of the Executive Secretary and Treasurer
Robert L. Faulkner, M. D.
2105 Adelbert Road
Cleveland 6, Ohio

AMA AND CHEST PHYSICIANS PLAN JOINT SESSION IN CHICAGO

The American Medical Association and the American College of Chest Physicians will hold a combined scientific session at McCormick Place, Chicago's new convention center, on Monday, June 25. This will be the closing day of the Chest Physicians' five-day meeting which will have its headquarters at the Morrison Hotel in Chicago. Also, it will be the opening day of the American Medical Association's annual meeting. Arthur M. Master, M. D., New York, Chairman of the AMA's Section on Diseases of the Chest, will deliver the opening address at the joint meeting. His topic will be "Fads and Public Opinion in Heart Disease."

The program will include a symposium on "Results of Surgical Treatment of Acquired Cardiovascular Disease" with Drs. Frank Ger-

bode, San Francisco; Donald Effler, Cleveland; Dwight E. Harken, Boston; E. Stanley Crawford, Houston; and Ralph A. Deterling, Jr., Boston. A second symposium on "Special Contributions in Chest Diseases" will feature as participants Drs. Theodore H. Noehren, Buffalo; Oscar H. Friedman, Stanley M. Blaugrund and Louis E. Siltzbach, New York; Morris Wilburne and Josh Fields, Los Angeles.

There will also be six round table luncheon discussions on various types of emergencies encountered in dealing with diseases of the chest. Moderators will be Drs. William F. Miller, Dallas; Eliot Corday, Los Angeles; Irving Mack, Chicago; Frederick H. Taylor, Charlotte, North Carolina; Peter Safar, Pittsburgh; and Roy F. Goddard, Albuquerque.

The AMA's Sections on Anesthesiology, Pathology, and Physiology will join with the Chest Physicians for the afternoon section of the meeting to conduct a symposium on "Inhalation Therapy." Robert D. Dripps, M. D., Philadelphia, will moderate.

The always popular Fireside Conferences, long a feature of the Chest Physicians meetings, will again be part of the joint meeting with AMA. These will be held at the Morrison Hotel on Monday night, June 25. Among the topics to be included in the thirty round table discussion sessions are: Bronchial Carcinoma, Allergic Bronchitis and Allergic Pneumonitis, Screening Tests for Emphysema, Indications for Cardiac Surgery in the First Year of Life, Impending Myocardial Infarction, Esophageal Problem Cases, and The Smoking Controversy.

Physicians attending these sessions are encouraged to ask questions and comment on the subjects. They are free to move from one table to another if and when they choose. Refreshments will be served.

FIFTH ANNUAL MEDICAL PROGRESS ASSEMBLY

Plans were announced recently by Dr. Stanley Graham, president of the Birmingham Academy of Medicine, for the 5th Annual Medical Progress Assembly to be presented here Sept. 30, Oct. 1-2, at the Tutwiler Hotel.

Composed of some 200 specialists, The Birmingham Academy of Medicine has been active in enlarging the sphere of postgraduate education. The Medical Progress Assembly, inaugurated in 1958, is one of its major projects.

In charge of the program is Dr. Arthur Freeman. Dr. Gordon L. Ross is serving as exhibits chairman and Dr. James J. Hicks, coordinator. Other committee heads will be announced.

"Dr. Freeman has secured an outstanding group of speakers for the scientific program," Dr. Graham said. "The complete list of speakers and topics will be released as soon as they have been confirmed."

Among distinguished specialists who have accepted invitations to speak are Drs. Harry E. Bacon, Philadelphia; Henry Beecher, Harvard University; Carleton B. Chapman, University of Texas, Dallas; Bentley P. Colcock, Lahey Clinic, Boston; Vincent P. Collins, Baylor University, Houston.

Also, Drs. Jerome W. Conn, University of Michigan, Ann Arbor; Oscar Creech, Jr., Tulane University, New Orleans; Luke Gillespie, Lying-In Hospital, Boston; Robert G. Heath, Tulane University, New Orleans; Franz J. Ingelfinger, Boston University, Boston.

Drs. Robert W. Kistner, Harvard University; Hugh B. Lynn, Mayo Clinic, Rochester; Carl V. Moore, Washington University, St. Louis; Robert H. Williams, University of Washington, Seattle; and Nathan A. Womack, University of North Carolina, Chapel Hill.

BOOK REVIEWS

Medical Physiology; edited by Philip Bard, 11th edition, C. V. Mosby Co., 1961, 1339 p. $16.50.

This new edition of the textbook formerly edited by McLeod and for the last several editions by Bard is a significant improvement over previous editions. New contributors have been added and many chapters have been completely rewritten and brought up-to-date. There is, however, still a good deal of ineveness in this respect, reflecting the difference in time when the various sections were written and the extent of revision at the time of writing. For example, the discussion of the central nervous system still contains a lengthy discussion of the functions of the cerebellum but only a relatively scant treatment of the hypothalamus and its relationship to the pituitary, a subject-area under wide discussion and exploration during the last decade. The discussions of learning and motivation are not up-to-date. Revision of the chapters on special senses was unfortunately neglected and this material will be of limited use to the student. On the other hand, chapters on kidney function, endocrines and respiration are good presentations of newer thinking in the field. The reviewer hopes that in the next edition the references for many

of the chapters will be brought up to date even though the material is not rewritten. Otherwise the lists should be omitted completely. The size of the volume and the amount of material precludes its strict use as a textbook. It will, however, serve as a good reference book and a source of much information in physiology.

H. S. MAYERSON

Cardiac Emergencies; by Harold Levine, M. D., Landsberger Medical Books, Inc. 1960. 381 p. $12.00.

Of works of this nature, Levine's "Cardiac Emergencies" appears to be outstanding. Written in a readable, lucid fashion, it is directed to "cardiologists, internists, general practitioners of medicine and students". It seems to this reviewer that each of these groups would enjoy and profit from the book. Whenever indicated Dr. Levine goes into rather specific details of treatment. Similarly, whenever applicable he presents the rationale for the suggested program of therapy. This is not the case in the usual "emergency handbook" in which therapy is merely listed in sequential steps. For the inquisitive, there is included an up to date, pertinent bibliography of modest size at the end of each chapter. Throughout the book one is impressed with the fact that the therapeutic principles advocated are those with which Dr. Levine has had considerable personal experience. When such is not the case, the author indicates this. Such an approach inspires considerable reader confidence.

Physically the book is eminently satisfactory. Illustrations are clear and ample in number. The character and arrangement of printing makes for comfortable reading. Probably the only justifiable criticism of this book is its price. Otherwise it is recommended for all medical libraries, as well as for the audience at which it was aimed.

JOHN J. WALSH, M. D.

Medicine in Tropical Africa; a Realistic Approach; by Michael Gelfand. Williams & Wilkins, 1961, 243 p. $7.00.

Dr. Michael Gelfand is now the author of two most valuable books. The title of the first *The Sick African* would apply much better to the present second book. The approach is not only realistic, as it deals mainly with the sick individual, but also progressive. The classical tropical diseases are discussed but also, and at greater length, the nontropical and noninfective ones where most of the differences between the African and the non-African pathology are to be found. One gathers the impression in the introductory chapters that the author has a tendency to retain cultural and racial factors as much as socio-economic factors to explain these differences. Many a reader well acquainted with other parts of Africa than the one especially familiar to the author will not agree that "the two races react differently" in emotional and mental stress. The comparison should not be made between the Africans (most of them still traditional, some of them semitraditional, and only a few literate) and the Europeans living in Africa who all belong, at least economically, to the upper stratum. Traditional Africans react as rural people all over the world.

Dr. Gelfand's latest book should become a classic for all medical students and doctors interested in tropical medicine. In its very concise form (243 pages) and with outstanding photographs (114 of them) the book should have a great appeal to the medical practitioners in the South. Many of the noninfective and nontropical peculiarities of the pathology of Africans should be profitably compared with the clinical pictures of Southern patients of African origin living in rural areas or belonging to the lower economic levels. Dr. Gelfand's book brings a remarkable contribution to a more realistic view of the diseases of Africa and the Africans.

LOUIS VAN DEN BERGHE, M. D.

W. B. SAUNDERS COMPANY features the following books in their full page advertisement appearing elsewhere in this issue:

GREEN and RICHMOND—PEDIATRIC DIAGNOSIS

A symptomatic approach to diagnosis of childhood disorders—telling you what to look for, how to look for it, and the significance of your findings.

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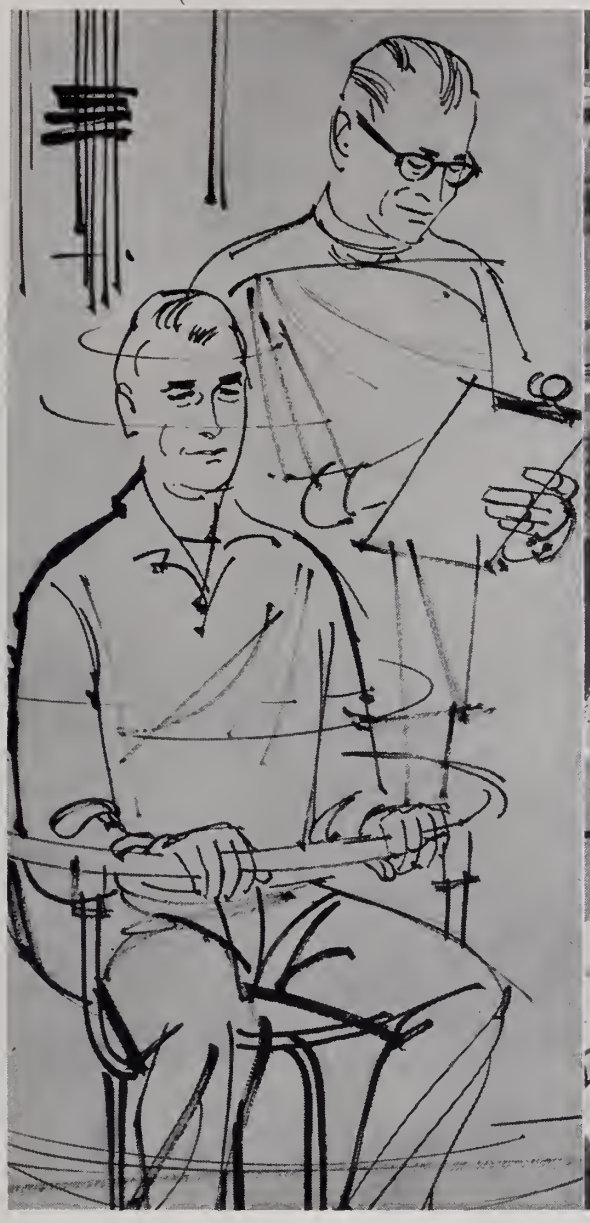
171 valuable articles from this world-famous medical center on the latest diagnosis and treatment measures in medicine and surgery.

PUBLICATIONS RECEIVED

Grune & Stratton, Inc. N. Y.: Self Hypnosis; A Conditioned-Response Technique, by Laurance Sparks.

W. B. Saunders Co., Phila.: Treatment of Injuries to Athletes, by Don H. O'Donoghue, M.D.; Medical State Board Questions and Answers, (10th edit.), by Harrison F. Flippin, M. D.; A Study of Psychophysical Methods For Relief of Childbirth Pain, by C. Lee Buxton, M. D.; Physical Diagnosis (6th edit.), by Ralph H. Major, M. D. and Mahlon H. Delp, M. D.

Vantage Press, Inc., N. Y.: Dr. Mary Walker, The Little Lady in Pants, by Charles McCool Snyder.





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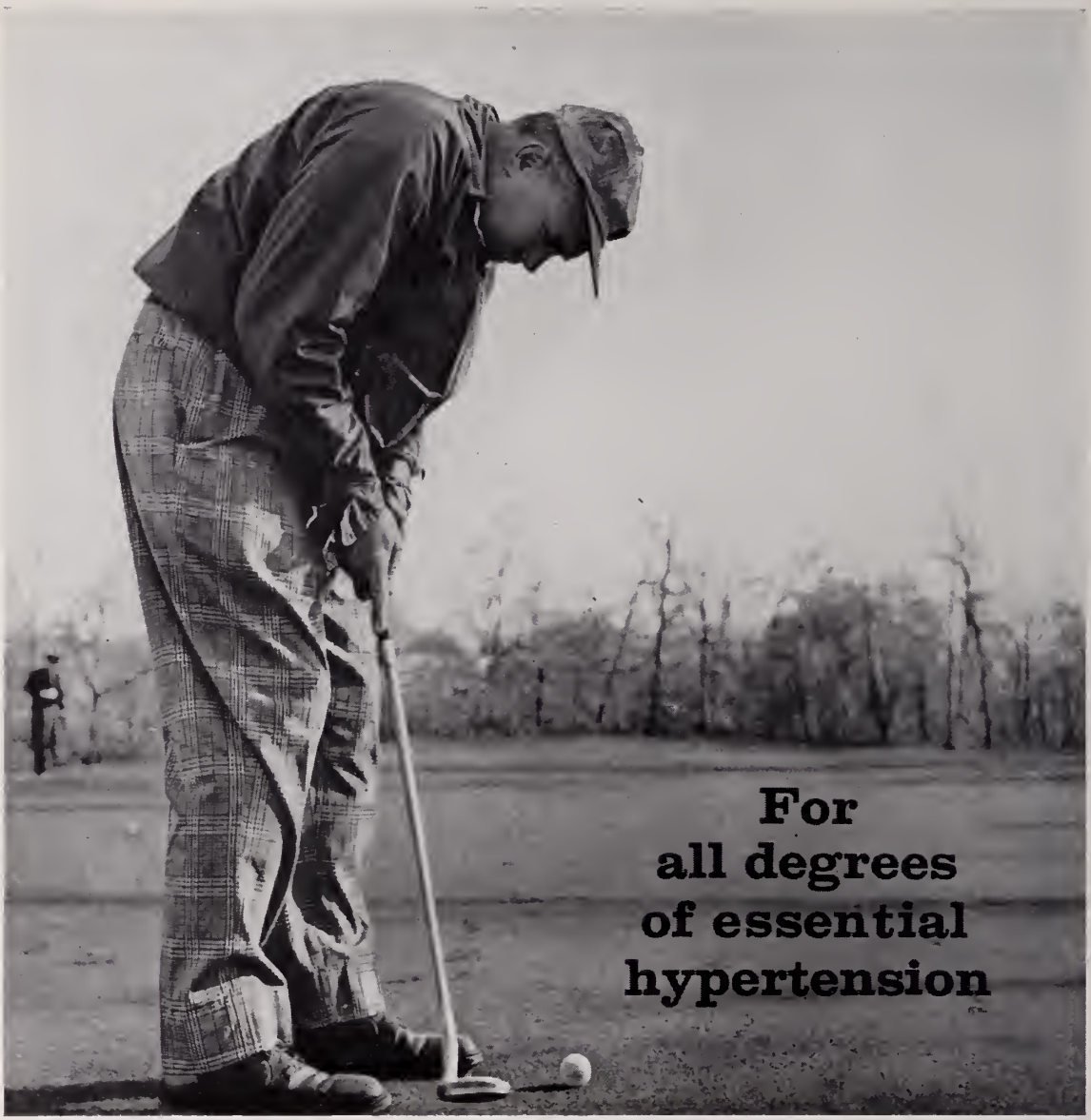
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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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EACH TABLET CONTAINS:
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DOSAGE: One or two tablets before retiring until regularity is achieved or as directed by a physician.

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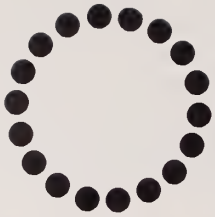
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Available: Bottles of 100 tablets.

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Fourteen patients, age 66 to 77, treated with Winstrol, usually in a dosage of 6 mg. daily, for various periods in order to correct underweight, weakness and chronic fatigue. Marked improvement occurred in appetite, sense of well-being and strength; almost all patients gained weight.

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Twenty-one patients with arthritis treated with Winstrol for pain and limited mobility due to osteoporosis. With few exceptions, dosage was 6 mg. daily; duration of treatment varied from a few weeks to 6 months. In 8 patients relief of symptoms was excellent and in 6 moderate. Of the 7 persons in whom no relief was obtained, 5 had received treatment for less than one month and some had been given doses below 6 mg.

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NOTABLE WEIGHT GAINS, INCREASED APPETITE AND SENSE OF WELL-BEING

Twenty-six patients, mostly women, weak, emaciated and seriously ill, were administered Winstrol in dosage of 6 mg. daily for periods extending up to 14 months (average 6.7 months). Notable weight gains occurred. Patients showed increased appetite, alertness and confidence, better appearance, increased mobility and tolerance to pain.

...for patients with chronic, non-malignant disorders—
IMPROVEMENT IN WEIGHT AND GENERAL ACTIVITY, INCREASED SENSE OF WELL-BEING

Eight patients with advanced tuberculosis, bronchopulmonary disease, nephritis and ulcerative colitis treated with 6 mg. of Winstrol daily for from 3 to 4 months. Gains in weight varied from 6 to 27 pounds with increased sense of well-being and improvement in general activity.

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Complete bibliography and literature available on request. Before prescribing, consult literature for additional dosage information, possible side effects and contraindications.

*animal data

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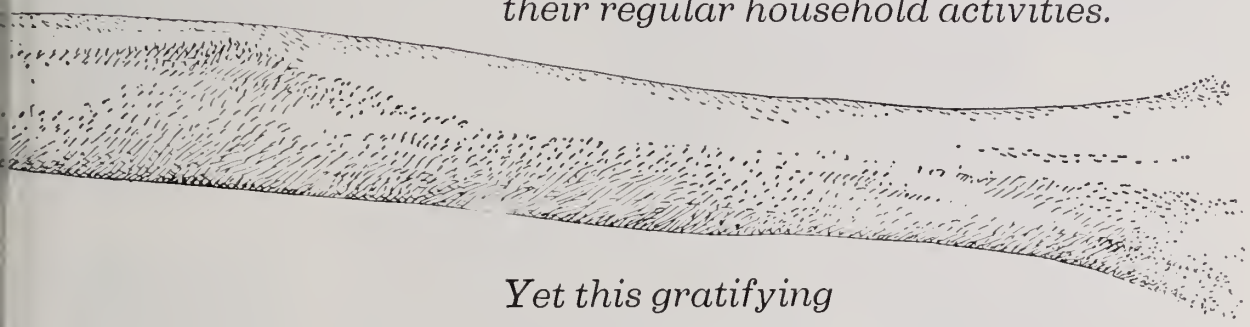
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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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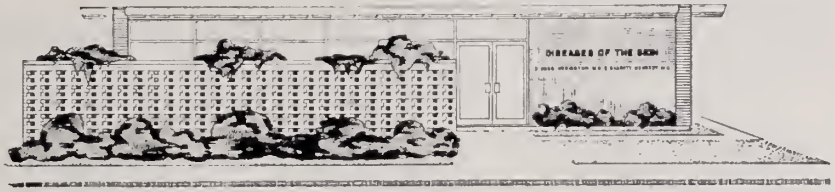
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WHEREAS, the National Cancer Institute and the American Cancer Society have demonstrated the need for complementary efforts by the people, on a voluntary basis, and the government, in the attack on this grave disease, and

WHEREAS, the fight against cancer has made remarkable progress since 1937 in the research laboratory, the hospital, the doctor's office, and the public's attitude; therefore

RESOLVED, that the American Cancer Society join with the National Cancer Institute in celebrating twenty-five years of the attack against cancer during the year 1962, which shall be called Cancer Progress Year, and further

RESOLVED, that the purpose of this Cancer Progress Year be to report to the public on where science now stands in cancer research, to intensify the efforts being made to persuade the public to act for its own protection, to improve the care of the cancer patient, and to step up all programs to speed the final victory over cancer.

NOTE: The above resolution was adopted by the ACS Board of Directors meeting in Seattle, June 8, 1961.

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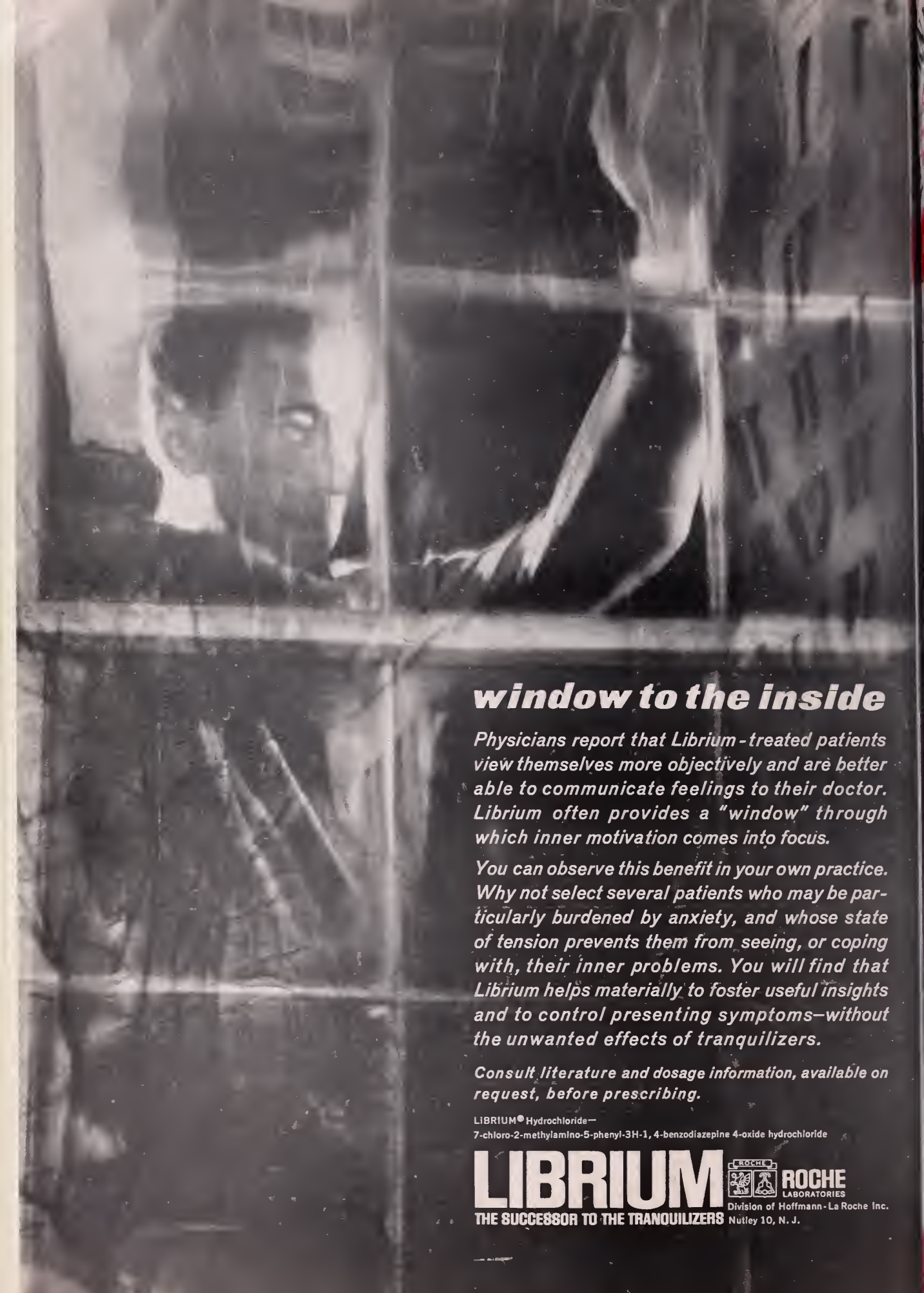
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Louisiana State Board of Health

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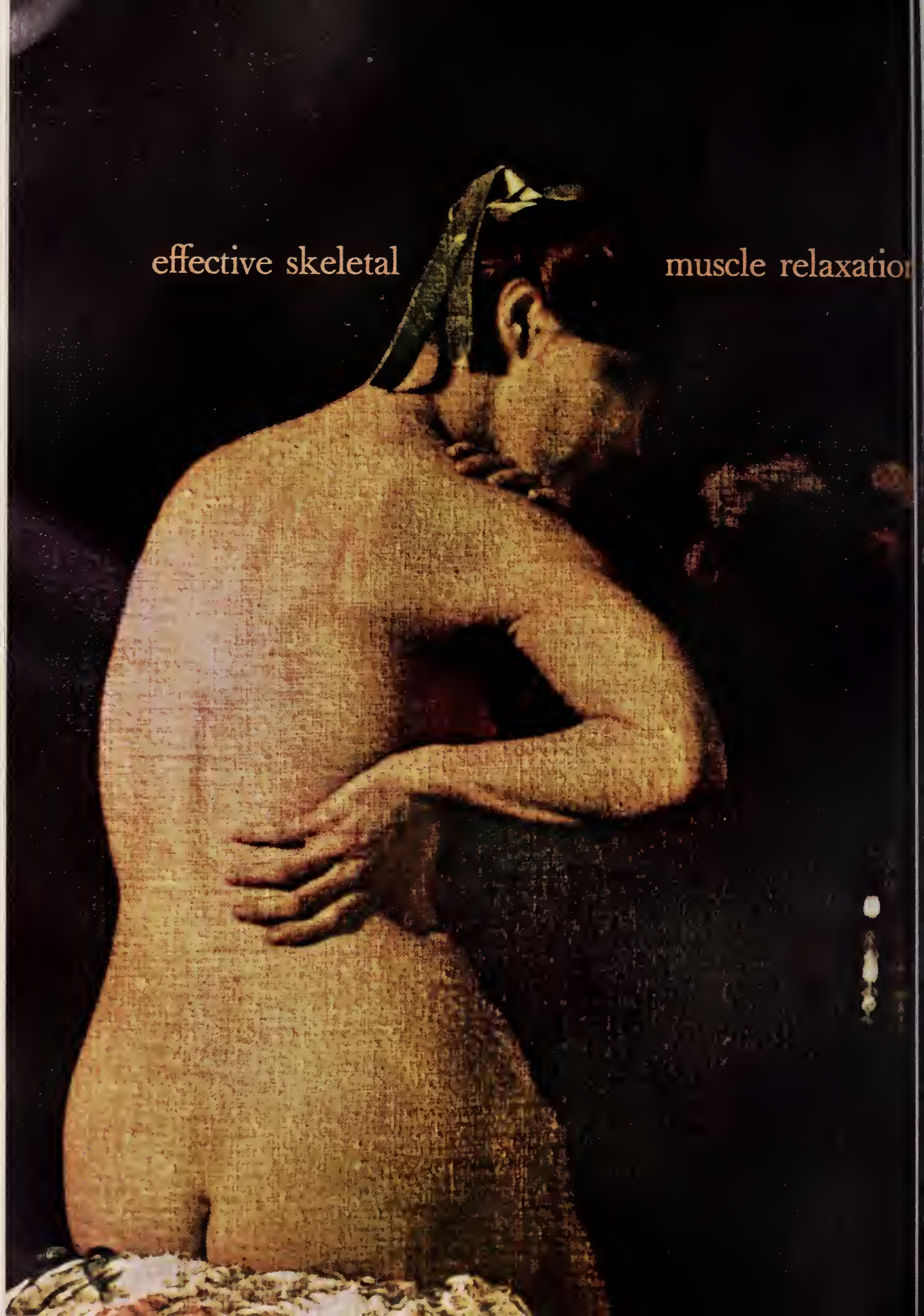
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References: (1) Minchew, B. H., & Cluff, L. E.: *J. Chron. Dis.* **13**:354, 1961. (2) Wallmark, G., & Finland, M.: *Am. J. M. Sc.* **242**:279, 1961. (3) Wallmark, G., & Finland, M.: *J.A.M.A.* **175**:886, 1961. (4) Welch, H., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 14. (5) Hodgman, J. E.: *Pediat. Clin. North America* **8**:1027, 1961. (6) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* **173**:475, 1960. (7) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* **105**:398, 1960. (8) Goodier, T. E. W., & Parry, W. R.: *Loncet* **1**:356, 1959.

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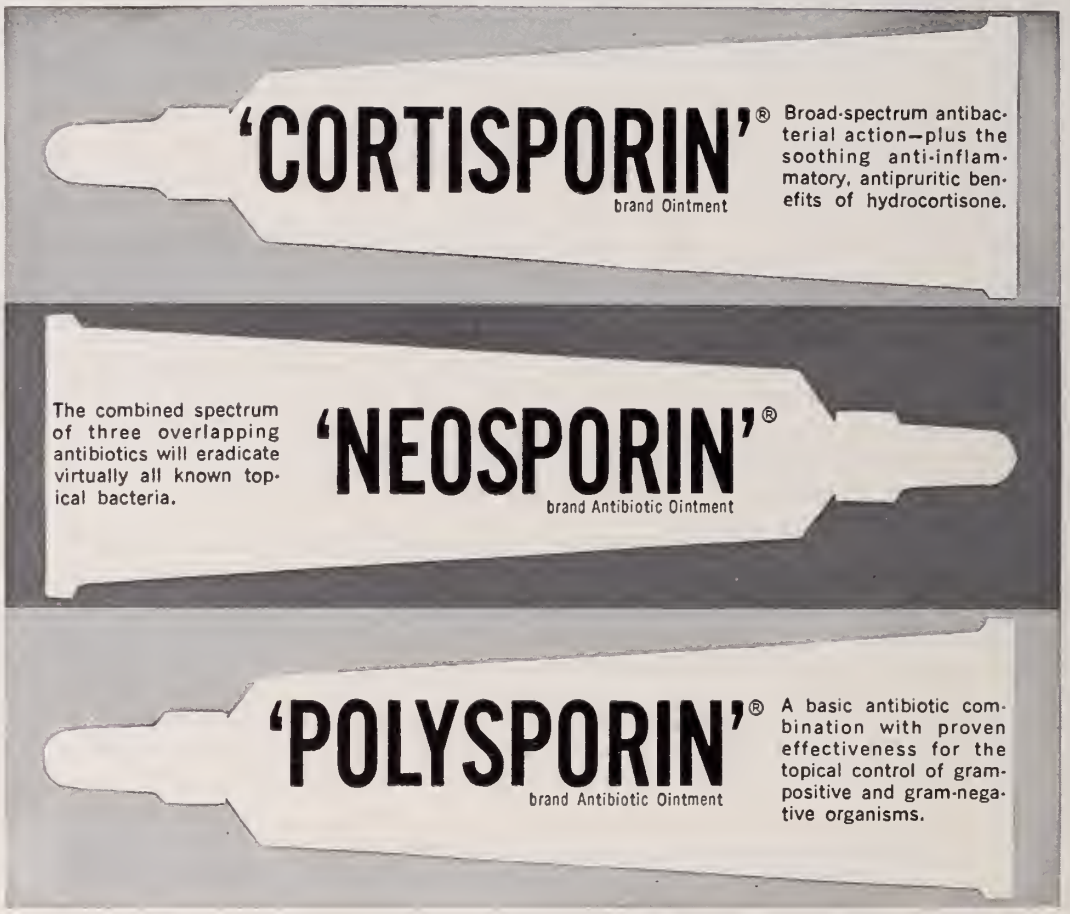
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—Gray, H. R., Wolf, R. L., and Doneff, R. H.: Evaluation of Flurandrenolone, a New Topical Corticosteroid, Arch. Dermat., *84*:18, 1961.

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JULY, 1962

Published Monthly
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The Salivary Gland Calculus-- Diagnosis and Treatment*

• This presentation is given with a view to emphasizing the newer concepts of etiology, pathogenesis, diagnosis and management of the salivary gland calculus—in the light of recent investigative efforts.

IRVING M. BLATT, M. D.†
New Orleans

THE patient with a salivary gland stone is not an uncommon visitor to the physician's office. The pain and swelling associated with sialolithiasis may be thought to be due to dental disease and the patient may be so directed. Considerable time and suffering may have come to pass before the problem is definitely resolved.

Incidence

The most common of the acute inflammatory diseases of the major salivary glands, after mumps, is the formation of calculi. When sialolithiasis is considered, the submandibular (submaxillary) salivary glands claim 85 to 90 per cent of cases.[1] Parotid sialolithiasis is infrequent; sublingual salivary stone formation is rare indeed and has been a matter of controversy. Approximately 20 per cent of salivary gland calculi are nonopaque.[2]

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, La., May 8, 1962.

† From the Department of Otorhinolaryngology, Louisiana State University School of Medicine, New Orleans, Louisiana.

Structure and Mineralogical Composition

This basic information is important to the physician in his understanding of the clinical problem. The analysis of salivary gland calculi by chemical methods as showing calcium carbonate, calcium phosphate, magnesium and potassium chloride, etc. was unsatisfactory and misleading. Many of the supposed constituents recorded in the literature were found to be nonexistent when sought by modern methods of identification.[3] However, upon application of the optical and x-ray diffraction methods of the geologist and mineralogist as well as the techniques of the micro-analytical chemist, more accurate knowledge is forthcoming:

1. The salivary gland calculus has a laminated structure (Figure 1). Concentric shells of a white, calcareous mineral alternate with layers of organic, brownish-yellow, resinous material. The latter also forms the outer covering of the stone.

2. The central core or nucleus in a single spheroid mass composed of the mineral, carbonate apatite—a complex calcium phosphate with the chemical formula:

$$CaCO_3\ [Ca_3(PO_4)_2]\ X$$

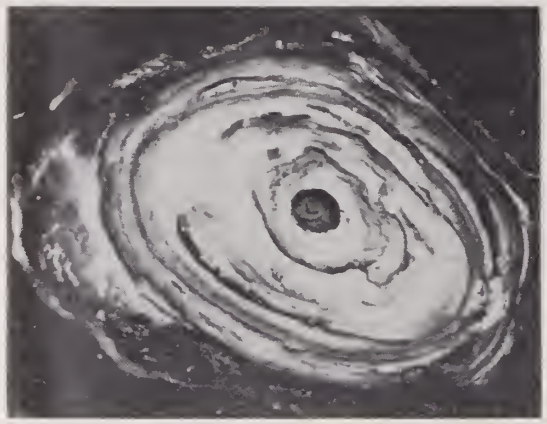


Figure 1. A macrophotograph (19 x enlarged) of the cross section of a parotid gland calculus. The laminated structure of the calculus is visible. The white material alternates with the darker bands which in actual color are yellow-brown and possess a resinous luster. The plane of the section is not through the exact center of the nucleus.

It appears structureless and without recognizable features. No micro-organism or inert foreign body can be recovered (Figure 2).

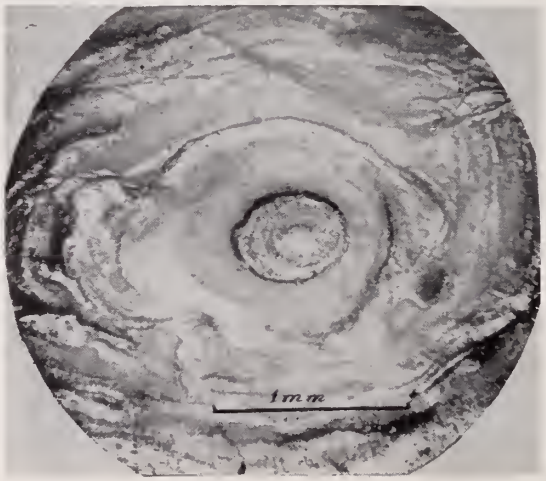


Figure 2. Photomicrograph (40 x) of the central part of the parotid gland calculus in Figure 1.

3. The laminated pattern of the salivary gland calculus indicates the pattern of growth. The inference is that the physicochemical relationship during growth alternates between an environment causing accretion of calcareous substance with periods favoring the accumulation of a more peripheral layer of organic, resinous material. Just what initiates or localizes the first stage of accretion is alluded to below.

4. The crystalline component of a salivary gland calculus appears to be virtually pure apatite as demonstrated by optical, x-ray diffraction and microchemical as well as differential thermal analysis techniques.[3] The term apatite refers to a group of biologically occurring complex phosphate compounds which have an analogous chemical composition and nearly identical crystalline structure (Figure 3).

Etiology and Pathogenesis

The most universally accepted theory of a nidus of infection by inert foreign body or micro-organism as the predisposing factor to sialolithiasis would make this concept improbable, in light of the above data.

Additional studies in our laboratory[4] concerning pathogenesis indicate that:

1. The incidence of submaxillary gland sialolithiasis is far greater than its mate in the parotid gland because of saliva pH difference. The range of salivary pH in the more alkaline submaxillary gland is 6.8-7.4 (fasting) as compared to the range of salivary pH in the more acid parotid gland 6.3-7.0 (fasting).

2. This relative alkalinity of submaxillary gland saliva plus elevation of salivary bicarbonate and alteration of salivary calcium - phosphorous ratio[5] in the stone-forming patient causes salivary apatite in solution to exceed its solubility product and precipitate out; thus the stone — a metabolic phenomenon!

3. Stone formation usually occurs within the hilum of the gland. Force generated by salivary flow may propel the calculus more distally into the main duct toward the external orifice. As the calculus increases in size by deposition of apatite, mechanical interference of salivary flow occurs with stasis and subsequent infection by mouth organisms as they proceed up the duct into the hilum area. The proteinacious debris of sloughed epithelium, leukocytes, etc., postinfection, constitutes the organic or resinous layer which alter-

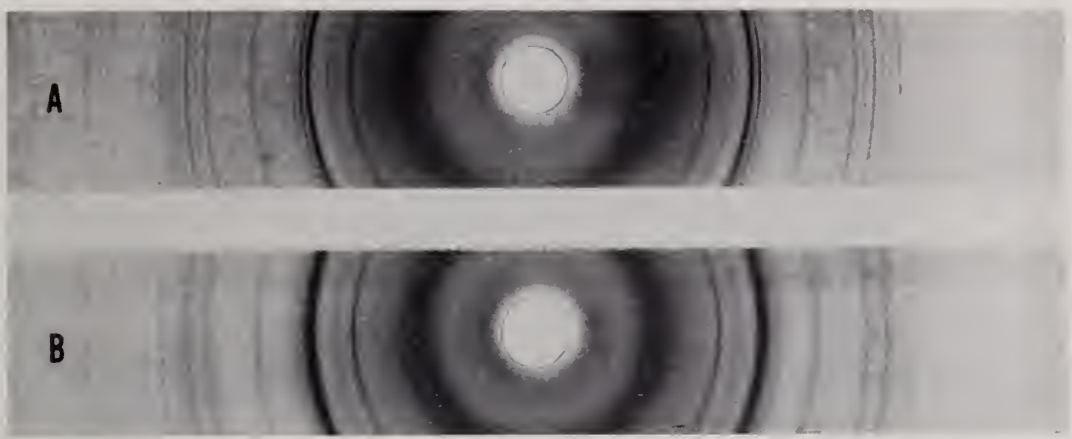


Figure 3. (A)—X-ray diffraction (powder) photographs of the known standard carbonate-apatite. B—X-ray diffraction pattern of the nucleus of the stone in Figure 2—virtually pure, crystalline apatite mineral.

nates with the calcareous layer of apatite —thus constituting the laminated pattern of salivary gland calculus growth. (Figure 4).

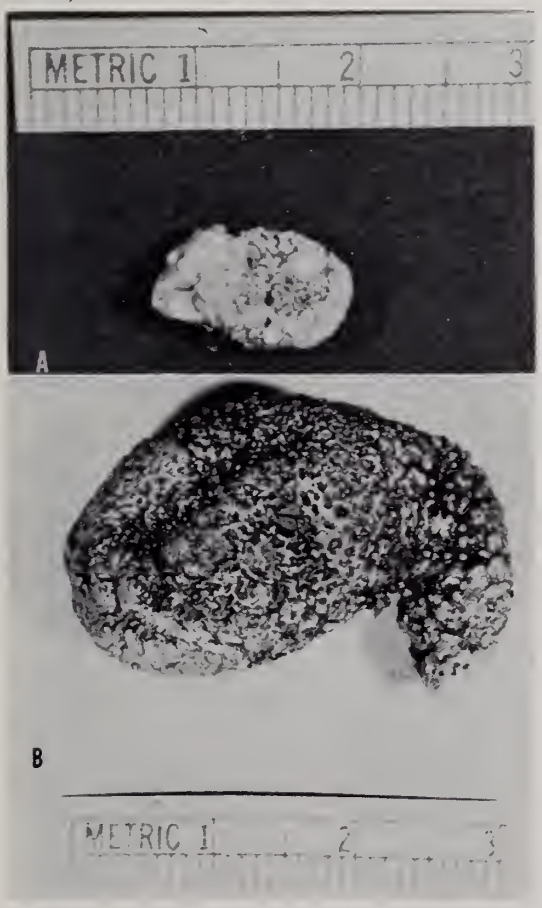


Figure 4. (A)—Calculus from the hilum of submaxillary salivary gland. (B)—A larger stone from the submaxillary gland showing the irregular, colloform surface.

Signs and Symptoms

Pain and Swelling. The degree of symptoms depends upon the size and location of the calculus and the amount of obstruction to salivary flow. If the duct is only partially obstructed, the submandibular swelling is transient, occurring usually at meal-time or on other stimulation to salivation.

Suppuration and General Toxic Symptoms. Complete obstruction, on the other hand, results in a continually swollen gland with severe, sudden colicky pain, swelling in the floor of the mouth or of the cheek and pus emanating from the duct orifice. Localized cellulitis, malaise and fever may be present.

Diagnosis

Bimanual Palpation. While the diagnosis of obstruction to the flow of saliva is usually easily established from the history, the location of the obstruction is not always easily determined. Bimanual palpation of either Wharton's or Stenson's duct may reveal the stone if it is of sufficient size and if there is not too much inflammation of the adjacent tissues. The duct should always be palpated from behind forward, lest the calculus be pushed into the inaccessible hilum of the gland.

Dilation of Duct Orifice and Probing. Instrumentation is not usually contraindicated in acute sialadenitis. This technique will not only help localize a calculus, but

will frequently facilitate drainage and may aid in the spontaneous passage of a small stone or particulate gravel. The lacrimal punctum and lacrimal probes are the instruments of choice (Figure 5).

Routine Roentgenograms. The presence of a radiopaque calculus is readily identified on intra-oral (occlusal) dental films and routine sinus film-technique roentgenograms.

Sialography. The roentgen visualization of the duct system of the salivary glands after injection of radiopaque media [6, 7] is a more accurate method of diagnosis than routine x-rays because:

1. Approximately 20 per cent of salivary calculi are nonopaque (radiolucent) and can be detected only by sialogram. (Figure 6).

2. If the calculus is opaque, the knowledge of its position in relation to the salivary gland parenchyma and the main duct will aid in planning its surgical removal.

3. Secretory sialography [8] gives not only the picture of the pathologic-anatomy of the duct system (filling phase) but provides information concerning the ability of the salivary gland to function in face of obstruction (evacuation phase). Thus as with the cholycystogram, there is either a functioning or non-functioning organ. If the latter exists, removal is indicated and justified.

In Figure 7 the filling phase of sialography demonstrates a calculus near the hilum of the submandibular gland and lodged in the proximal dilated portion of Wharton's duct. The poststimulation film demonstrates the ball-valve mechanism of obstruction to salivary flow which is the basis of pain and swelling precipitated by eating.

In long standing cases of sialadenitis with sialolithiasis, there may be loss of the arboreal pattern of the normal gland. The main duct is dilated; and because of chronic infection and atrophy of salivary parenchyma, irregular collections of contrast material suggest abcess formation with the gland (Figure 8).

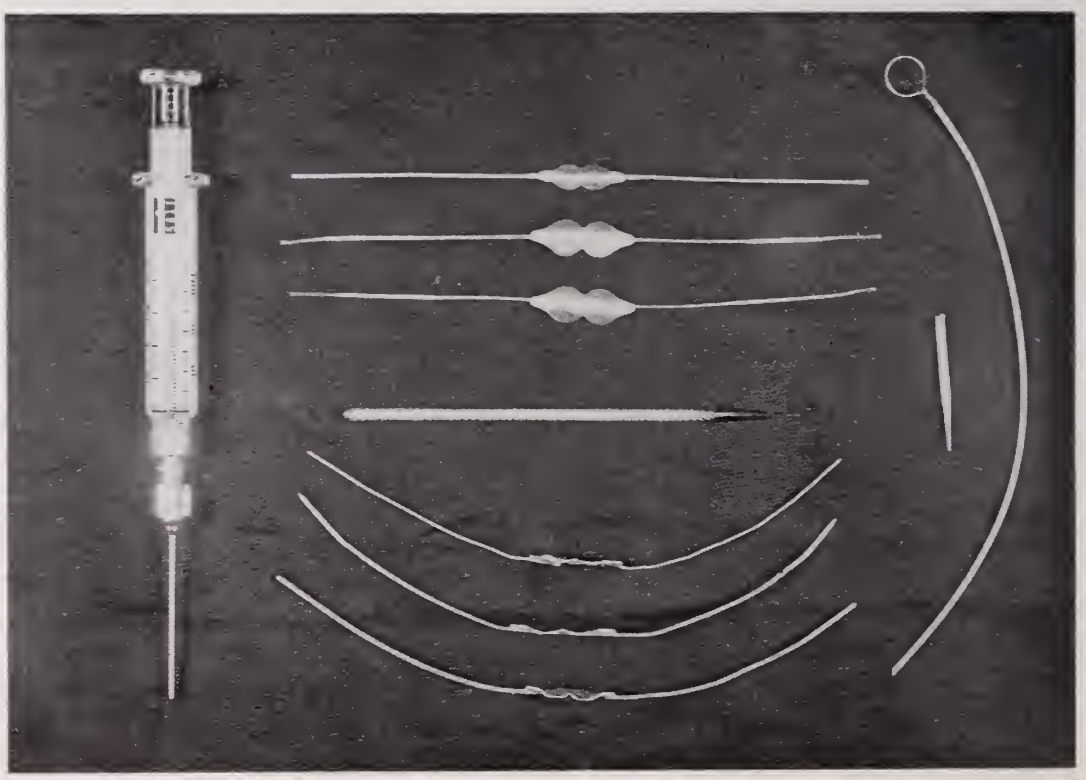


Figure 5. Apparatus for duct dilation, probing and sialography; including olive-tipped and blunt-tipped lacrimal probes, punctum dilator, section of polyethylene tubing and fine wire stylet, hypodermic syringe and needle.



Figure 6. Sialogram of parotid gland calculi. (S)—Scout flim of parotid gland area showing no visible calculus. (F)—The filling phase demonstrates multiple, small, radiolucent calculi in the hilum of the parotid gland. (E)—The emptying film shows retention of contrast material and obstruction to salivary flow.



Figure 7. Sialogram of submaxillary gland calculus. (S)—The scout or preliminary film demonstrates a small radiopaque calculus—exact site undetermined—in its relation to the duct system of the submaxillary salivary gland. (F)—The filling phase shows the calculus lodged in the proximal dilated portion of Wharton's Duct. (E)—The emptying phase shows that upon stimulation, the salivary flow forces the stone into the narrower, distal portion (arrow) of Wharton's Duct. This post stimulation film (lemon) demonstrates the ball valve mechanism of obstruction to salivary flow which is the basis of pain and swelling precipitated by eating.



Figure 8. Sialogram of advanced sialolithiasis. (S)—Scout film. 1 cm. calculus in the hilum of the submaxillary salivary gland. (E)—The evacuation film (post-lemon stimulation) demonstrates obliteration of the arboreal pattern of the peripheral duct system. The main duct is dilated with irregular collections of contrast material which suggests abscess formation within the gland.

Occasionally calculi may erode the wall of the main duct and become lodged in the gland substance. This results in production of chronic infectious granulomas which in themselves cause continued suppuration and further duct obstruction (Figure 9).



Figure 9. A complication of sialolithiasis. (A)—Filling phase of parotid sialogram demonstrating peripheral parotid duct obstruction with absence of arboreal pattern. The arrow demonstrates a barely visible large calculus which has eroded Stenson's duct to become lodged in the gland parenchyma. (B) — Operative field demonstrating the calculus (arrow) with surrounding chronic infectious granuloma formation. The facial nerve has been identified, and preserved.

Treatment

The treatment is surgical removal of the calculus. This should be preceded by an adequate course of broad spectrum antibiotic therapy to reduce and or eliminate the acute inflammation associated with obstruction to salivary flow.

1. **Intra-oral Extraction from Wharton's duct.** This technique, by definition, excludes removal of a calculus from the hilum of the gland as a stone lodged therein is usually not accessible for easy, accurate and safe removal. It is important to consider prevention of injury to the lingual and hypoglossal nerves and the large blood vessels in the floor of the mouth.

Anesthesia is easily and safely accomplished by local infiltration of the lingual nerve. The nerve can be approached in the oral cavity between the side of the tongue and the socket (alveolus) of the last molar tooth where it lies close beneath the mucous membrane of the floor of the mouth, as the nerve crosses the internal pterygoid muscle to continue forward between the mandible and the tongue musculature. Anesthesia by this technique is complete, virtually immediate and obviates floor of the mouth swelling caused by infiltration of anesthetic agent along the course of the submaxillary duct.

Technique. A lacrimal punctum dilator is used to locate and dilate the duct orifice on the caruncula salivaris. If orifice dilation is troublesome, the papilla of the duct may be grasped and cut off. This greatly facilitates introduction of the lacrimal-type probes. No complications follow this procedure. After insertion of the probe to the obstructing stone (stones) *the duct should be slit from the orifice throughout its entire length to the point of obstruction by calculus and beyond—to the gland hilum.* The calculus can be literally extracted or shelled out of its tightly adherent, scarred mucous membrane jacket with a curette. Laying Wharton's duct open widely along its entire course from the orifice to the gland hilum removes gravel, adhesions and strictures. This technique is without danger of complications. No sutures are necessary for re-establishing the lumen.

2. **Excision of the Submaxillary Salivary Gland.** Removal of the salivary gland is indicated and justified when the sialogram demonstrates a hilar calculus associated with a poorly functioning salivary gland (Figures 7 and 8). This can be best accomplished by the external approach. Injury to the ramus mandibularis of the facial nerve, hypoglossal and lingual nerves should be obviously avoided.

3. **Calculus Removal from Stenson's Duct.** Solitary calculus formation is much less frequent in the parotid gland. The multiple, small stones (Figure 9) occurring in the hilum of the gland can be frequently removed by duct dilation and extraction with small ring-type ear curettes. Sedation or general anesthesia is preferred to local anesthetic infiltration. If they have not produced chronic suppuration as the result of repeated obstructive episodes, irradiation therapy to effect gland atrophy may be considered.

4. **Parotidectomy Vs. X-Ray Therapy.** In long-standing cases of parotid sialolithiasis there is usually loss of the arboreal pattern of the duct system (Figures 8 and 9) with little or absent salivary function. The indication for parotidectomy is thrust upon the surgeon. This is particularly the case when the calculus erodes Stenson's duct to become lodged in the parotid parenchyma (Figure 9).

Irradiation therapy may be considered, but one must bear in mind that a relatively large dose of x-ray may be necessary to produce the required atrophy of gland parenchyma along with eradication of infection—considerably more than the radiotherapist is willing to give a non-cancer patient.

Total parotidectomy is a somewhat formidable procedure because of the danger of trauma to the facial nerve. The risk is not great, however, in the hands of one experienced in this particular procedure.

The surgeon contemplating a total parotidectomy for chronic gland suppuration should be well acquainted with the anatomy of the facial nerve for the operation is in essence a complete anatomical dissection of the facial nerve and all of its branches with piecemeal removal of the gland. He should be prepared to repair by end-to-end suture or nerve graft a necessarily sacrificed or inadvertently severed branch of the nerve at the time of the original operation. Late repair may be accomplished, but is much more difficult. In general, the results of total parotidectomy in these cases are excellent and warrant its recommendation in selected situations.

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Growth in Clinical Research

In the past 15 years there has been a striking growth in clinical research as a two-way bridge between the laboratory and clinical practice. Coupled with this is the achievement of the pharmaceutical industry in the manufacture, quality control, and marketing of new products. In consequence, the lag between scientific discovery and widespread use of new drugs has been shortened.—Luther Terry, M. D., Surgeon General, U. S. Public Health Service, to 1961 National Health Forum.

Clinical Significance of Infection With Atypical Acid-Fast Bacilli*

• An interesting study of atypical acid fast bacilli about which not much is known as to epidemiology and source and mode of infection.

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IN recent years an increasing amount of attention has been paid to an ill-defined group of mycobacteria isolated from the human-morbid material. They are acid and alcohol fast bacilli, but differ from virulent tubercle bacilli in a number of ways, notably, in lacking the characteristic pathogenicity for certain animal species.

There does seem to be a certain geographical prevalence of these organisms and they may, in fact, infect both man and animals. From the established work of Fenger,[1] as well as Edwards and Palmer,[2] it is noted that tuberculin hypersensitivity in man need not necessarily be derived from the single source of infection with mammalian tubercle bacilli, but on the contrary, organisms antigenically related may be capable of infecting man and causing skin hypersensitivity to standard tuberculin, although such cross reactions are usually of lesser degree with smaller amounts of induration being evident.

Nomenclature and Classification

In discussing this subject one must necessarily mention nomenclature and classification. The term atypical is quite unsatisfactory and there are many who prefer to refer to this group of organisms as "anonymous mycobacteria". In view of the fact that atypical organisms are capable of producing disease in man many bacteriologists feel that this group should receive a specific classification and separate species identification so the term "unclassified" is often times being substituted in referring to this group of organisms.

The most commonly accepted classification, at the present time, is that based upon pigment formation and growth characteristics and is commonly referred to as Runyon's classification.[3]

TABLE 1
CLASSIFICATION BASED ON PIGMENT FORMATION AND GROWTH CHARACTERISTICS

(Mycobacteria—other than *M. tuberculosis, var. hominis* and *var. bovis*. Groupings are based upon pigment formation and growth characteristics, but groups are not entirely homogeneous. Organisms are not virulent for the guinea pig.)

Group I
Pigment appears when organisms are exposed to light during growth period. Growth is slow at 37° C. or at room temperature. *(M. Kansasii)*

Group II
Pigment is present regardless of the presence or absence of light during growth period. Yellow or orange pigmentation may become a deeper orange-red after exposure to light. Growth same as Group I.

Group III
Very little or no pigment formation. Growth same as Group I. Some strains are pigmented and color of pigment does not change after exposure to light.

Group IV
Characterized by rapid growth, usually in three to four days, at both 37° C. and at room temperature. Pigment is lacking in most strains.

It is of some importance to note that the groups in Table 1 are not homogeneous, but each group is comprised of several different species or strains. Group I is probably the most homogeneous and the major organism within this group has

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been recently named *M. kansasii*, a term that is now preferable to previous descriptive names such as "photochromogen".

The neutral red test is a fairly quick and easy way to roughly differentiate the so called typical and unclassified acid-fast bacilli. The mycobacterium tuberculosis always gives a positive neutral red test while the unclassified AFB nearly always gives a negative reaction. Incidentally, Lester and his group [4] report that all known saprophytes give a negative neutral red test. There are other bacteriological techniques used to attempt to differentiate the typical and unclassified. Some of these are: colonial and cellular morphology, rate of growth, oxidation-reduction of dyes, catalase reaction, drug sensitivity and guinea pig inoculation.

Incidence

In the southeastern portion of the United States, principally in Georgia and Florida, it has been noted that many give a positive tuberculin reaction but with no evidence of tuberculosis.[5] It is noted there is an increase in the number of reactors to higher tuberculin concentrates as compared to the rest of the country. Edwards and Palmer have shown that more than two-thirds of the young men recruited for Navy service in Georgia and Florida react strongly to PPD prepared from the Group III Battey Mycobacterium while only 6 per cent react strongly to PPD-S. By further carefully controlled studies on limited, stable population groups in Georgia it has also been noted that unclassified acid-fast mycobacteria can be isolated from sputum and saliva of as high as 14 per cent of healthy people in this area. It has been further demonstrated that guinea pigs may be infected by either a parenteral or oral route with unclassified mycobacteria and characteristically will not develop a progressive disease process, but they may later react weakly to mammalian tuberculin and react strongly to tuberculin prepared from the infecting organism, despite the absence of demonstrable lesions at autopsy.[2, 5]

A study conducted by Chapman and Guy [6] in the Dallas and Fort Worth area revealed a large number of patients with disease due to *M. kansasii* or Group I as demonstrated by pharyngeal swabbings of healthy children and from fluctuant submandibular lymph nodes of tuberculin positive children, suggesting that the mouth may be a portal of entry. While it is evident that there are abundant sources in nature for infection with many types of unclassified acid-fast organisms, the origin of *M. kansasii* and the Group III so called Battey strain, which together account for most of the disease thus far reported in man, is not clear. It is also observed that the epidemiology and mode of mechanism of spread of infection in the unclassified groups is markedly different than that of *M. tuberculosis*, inasmuch as the familial or history of contact relationship does not seem to be nearly as apparent in the group of individuals infected with these organisms. The abundance of Group II and Group IV organisms in cultures of sputa and gastric contents [5] and their infrequency of isolation from diseased tissue has resulted in a general opinion that they are relatively avirulent for man. There is some evidence, however, that their presence may be the cause of occasional tuberculin cross reactions in man and animals.[5, 6]

Often times the question arises as to whether or not these unclassified organisms represent variants or mutations of the typical bacilli which are directly related to chemotherapy. Since many of these organisms were known to exist prior to the chemotherapy era this concept has found comparatively few supporters, and no definite answer as to the question of mutation as a factor in the origin of unclassified strains is available.

The virulence of the unclassified group of mycobacteria for man is considerably less than is the virulence of *M. tuberculosis* and this concept is supported by the prevalence of infection measured by the use of specific tuberculins and the comparatively few cases of disease found. Even in the so called endemic areas hospital admissions do not exceed 1 to 3 per

cent with one exception. A personal communication reveals that in the Dallas-Fort Worth area 14 per cent of all admissions to the Woodlawn County Tuberculosis Hospital during the past year, were found to be due to one of a group of unclassified mycobacteria.

Difficulties in Therapy

It should also be noted that as contrasted in treatment for tuberculosis, where in the average case, the tubercle bacilli are very susceptible to anti-tuberculosis drugs, a very large per cent of the unclassified organisms are initially resistant to many of the anti-tuberculosis drugs. This factor coupled with perhaps other factors which lower the resistance of the host such as a high reported incidence of associated diseases like emphysema, ulcer, carcinoma, etc., all tend to affect the response to treatment and make therapy a relatively difficult problem in many patients.[7] Also, most of the unreported series of any size emphasize the fact that 75 to 80 per cent, or more, of patients undergoing hospital treatment have advanced pulmonary involvement, so care must be taken in reconciling the concept of low virulence with the reported difficulties in therapy.

Clinical Course

The clinical course of pulmonary infections caused by unclassified organisms usually consists of an innocuous clinical onset with no definite symptomatology; hemoptysis may be present as the result of an endobronchitis. One rarely sees the complications of associated pleural effusion and should always be suspicious of isolated thin-walled cavitary lesions with negative tuberculin testing. The differential diagnosis by and large rests with the laboratory technician or the bacteriologist. The clinician may gain some clue to the fact that the disease is due to an unclassified acid-fast organism if the response of the patient to treatment is poor or absent. As in tuberculosis most cases are in the group of white, middle-aged males. Other groups seem to have a very low predomination for the disease process produced by unclassified organisms. Children are not immune, however, and the occurrence of lymphadenitis limited more or less to the submandibular areas should be kept in mind.

Criteria

Dr. John Chapman reviewed 40 films of minimal tuberculosis and pulmonary infections caused by atypical AFB and developed the following x-ray criteria of these lesions. In pulmonary infections caused by atypical AFB the following is noted:

(1) Bronchogenic spread is uncommon.

(2) Diaphragmatic pleural changes are absent.

(3) The nodulatory component of the infiltrative process commonly seen in tuberculosis is missing.

(4) Calcium deposits are infrequent, either in the hilum or lung parenchyma.

(5) Absence of contraction of a lobe.

Mant and Lester have reported distinguishing features of the pathology found in resected lungs from patients with disease due to *M. kansasii* "Group I" and have reported the prevalence of endobronchial involvement, increased lipoid material in the macrophages, a relative lack of confining fibrosis and the presence of asteroid and Schaumann bodies in the giant cells.

Response to Therapy

With the exception of patients with disease due to Group I and Group III organisms, the only groups which have been reported in any sizable numbers, very little can be said, at this time, about significant or characteristic clinical features of the disease caused by the unclassified organisms. It appears that response to treatment may be delayed in 40 to 50 per cent of patients with disease due to the "Battey" strain or Group III organisms, and that strict bedrest, multiple drug regimens and surgery are often necessary. The incidence of therapeutic failure appears to be higher than in classical pulmonary tuberculosis. Results of therapy in patients with disease due to *M. kansasii* have been reported by Lester and Jenkins to be

poorer and less predictable than in true tuberculosis.

Data on therapy in animals confirms the fact that pretreatment bacterial resistance is an important problem and should be considered in the planning of the treatment program. In a series of 69 cases reported by Corpe and his group, it is revealed that only 34.7 per cent of 69 patients converted their sputa for a period of three months or longer. A total of 14.5 per cent died while in the hospital. In this particular group of patients the offending organism was found to be a non-chromogenic acid-fast bacillus or the so called "Battey" type. A total of 14 patients, of this group, had surgery and of this 58.4 per cent converted their sputum following surgical procedures. The pathological findings on the resected surgical specimens were identical in all cases with those due to typical *M. tuberculosis.* Lesions from the resected specimens were positive on microscopy and in 6 or 7 cases the resected specimens were positive on culture for atypical organism. The pathologic findings would seem to substantiate the belief of some that the atypical organisms isolated from patients were capable of causing, and did cause, pulmonary disease indistinguishable from that caused by *M. tuberculosis* as shown by growth and microscopic examination of the disease tissue. From the resected specimen, certainly no evidence was found to suggest that these organisms were not the cause of the pulmonary disease manifested.[8]

Therefore, from the limited reports available, thus far, it appears that therapeutic delay may be a somewhat more serious problem in disease due to Group III or "Battey" type organism than it is in disease due to *M. kansasii.* Very little can be said regarding the prevalence, clinical course, or response to treatment of patients with disease due to Group II and Group IV organisms since the case reports are too few for generalizations to be made. However, long-term studies on patients with disease due to *M. kansasii* and the "Battey" group clearly reveal that relapses may occur.

Public Health Implications of Findings

The public health implications of findings reported regarding the epidemiology of the group of unclassified organisms are not entirely clear. The various series reported by numerous authors [4, 7, 8] are small in number and have not been followed for a sufficient period to determine the ultimate response of therapy as well as the possibility of change in infectiousness as the result of such therapy. However, these patients do create a problem of long-time management when they fail to convert their sputum. Many of them eventually leave the hospital by unsanctioned discharge or are considered for maximum hospital benefit discharges despite the continued presence of acid-fast bacilli in their sputum. Their disease appears to be of low-grade communicability, but to just what degree remains to be seen. Many vexing problems exist with respect to the pulmonary disease caused by these organisms. More effort is needed on bacteriologic classification of all potentially pathogenic atypical acid-fast bacilli.

The source and mode of infection, presumed to be exactly the same as for typical *M. tuberculosis,* needs clarification The role of previous nontuberculous lung disease in possibly preparing the ground for infection with these organisms needs more study. An attempt needs to be made to recover these organisms from surgical specimens of patients having non-tuberculous chest surgery, such as bronchiectasis, carcinoma, or lung abscess. There needs to be an intensive study of the sputum of these patients and of their resected specimens for other possible pathogens. More knowledge of communicability is desirable for practical purposes of management.

More work needs to be done on duration of exposure to contacts, in the culturing of repeated sputum specimens of all contacts, including the primary case where the family history is positive for tuberculosis. In addition, further clarification of the various skin testing procedures must be evaluated by means of preparation of material with the various groups of unclassified

organisms. There is presently, experimental work underway by various groups around the country, and perhaps this will give us an added tool in the near future in differentiating the unclassified bacilli from the typical tubercle bacilli.

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Case History with Happy Ending

This little girl of seven had a tummy ache, but her family didn't pay much attention. When we saw her she had a ruptured appendix and a temperature of 104 degrees. We put her in the hospital and took out her appendix, sucked out some of the peritonitis resulting from it, put some medicine in, gave her medicine in the veins for a couple of days. She had no abnormal temperature after three days, then was put on medicine by mouth and left the hospital on the seventh or eighth postoperative day. The drugs must have cost $30 - $40, maybe more, maybe less. But I'd like anybody to ask the parents of that youngster how much they were worth. We don't say how much does it cost but how much is it worth.—Edward R. Annis, M. D., in **Journal of Indiana State Medical Association,** July 1961.

Hair Loss: Some Current Concepts*

• A clear description of the problems pertaining to baldness with classification of types, known causes and therapeutic management.

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HAIR loss is of universal interest. Alopecias have often been conceded to be a natural consequence of aging or else idiopathic, when many etiologic factors may be involved. This report will present some current concepts which should be considered in the differential diagnosis of loss of hair. A brief discussion of the embryologic and anatomic aspects of hair is necessary for a better understanding of the dynamics of the factors responsible for hair loss.

It has been estimated that the human scalp contains 100,000 follicles, which produce hair at the rate of 0.35 mm. per day.[1] The follicle and its accompanying sebaceous glands are derived from the primitive ectoderm and mesoderm. Recognizable hairs occur on the scalp between the third and fifth month of fetal life. The first growth, known as lanugo hair, is fine and silky; later, the same follicles give rise to coarse adult hairs called terminal hairs.

Cyclic Production of Hair

Production of hair occurs in a cyclic fashion, with a long phase of growth lasting for years, followed by a short rest period of a few months, after which the old hair is shed as the new growth cycle begins. Each follicle has its own cycle and is independent of adjacent follicles. Because of the long growth phase and relatively short period of rest, approximately 90 per cent of the hairs of the scalp are in the growing or anagen stage, whereas only about 10 per cent of the follicles are in the resting or telogen stage at any one time.[2]

Normally, twenty-five to one hundred hairs are shed daily from follicles in the telogen phase of the cycle.[3] Since hairs are less firmly anchored in the resting follicles than in the anagen follicles, telogen hairs comprise the normal daily loss from such everyday stresses as combing, brushing, and shampooing.

The hair itself is a lifeless structure composed of keratinized cells. Only agents that affect the follicle can produce future aberrations in the production of hair. Cutting, burning, shaving, and other traumas directed at the hair itself have no effect on subsequent growth of hair. Infectious diseases of the scalp, severe physical injuries, and systemic illnesses which produce atrophy or scarring result in irreversible follicular damage and permanent alopecia.

Dr. Albert Kligman [3] in a brilliant essay described a definite clinical entity which he called "telogen effluvium". He has defined a distinct series of events which account for more common types of reversible hair loss.

Male Baldness

Male baldness is by far the most common type of hair loss seen in patients. It generally begins when the patient is in the late twenties or early thirties and progresses from the outer areas and along the temporal regions in such a fashion as to result in slight thinning to an almost entire loss of hair, except for a fringe. It is estimated that 43 per cent of all men will experience this type of alopecia either prematurely or in association with

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aging, but it is impossible to predict the extent of hair loss.[4] Heredity undoubtedly plays a great part in this type of alopecia, although factors such as those associated with endocrine, vascular, or neurogenic origin have also been speculatively considered.[5] Masculine alopecia is of unknown etiology, and patients should be warned against seeking any "miraculous" cures.

Alopecia Areata

Alopecia areata is another common type of hair loss manifested by sudden development of bald patches, usually on the scalp, but occasionally on the beard, eyebrows, axillae, and on any other area of the body. The onset of this phenomenon may be somewhat slow, and progression may continue in a peripheral fashion for weeks to months. Alopecia areata may assume different morphologic forms, varying from one well circumscribed patch to a universal type in which hair is lost on every part of the body. The more generalized type offers a poor prognosis, whereas the other forms will regrow as fine lanugo hair with the shafts 1 to 2 cm. long before they fall out.[5] The second or third regrowth will usually persist, although in older persons loss of hair may be permanent, especially when large areas are affected.[6] This type of alopecia is exploited often by non-physicians and medically trained personnel who deceive the public with various ineffective techniques; the patient's hair will, in fact, usually spontaneously in the absence of any treatment at all, regrow. Alopecia areata is, thus, generally a reversible form of hair loss.

Infections of the Scalp

Infections of the scalp may be of fungal, bacterial, or viral origin and may result in temporary or permanent alopecia. The commonly known "ringworm of the scalp" or tinea capitis, is of fungous origin and usually offers a good prognosis. *Trichophyton tonsurans,* however, may cause permanent alopecia from cicatricial scarring which affects the hair follicle. Dissecting streptococcal and staphylococcal infections may also result in a curious pattern of alopecia, and for this reason both mycotic and bacterial infections require early diagnosis and treatment. Herpes zoster, or shingles, in any hair-bearing part of the body is one of the viral infections which often leave such severe scarring as to result in permanent alopecia.

Systemic Diseases

Systemic diseases should be considered in the differential diagnosis of alopecia, as certain conditions, such as leprosy, actually infiltrate the hair follicle and cause loss of hair. Secondary syphilis with folliculitis should also be considered, and, of course, gummatous lesions can be responsible for cicatricial hair loss.[5] Pemphigus and its variants have also been incriminated, as have bullous drug eruptions, endocrine disorders such as pituitary disease, and progeria.[5]

The most recent enlightening research concerns telogen effluvium.[3] Heretofore alopecia has often been accepted as a consequence of certain illnesses without any evidence of the mechanism involved. Telogen effluvium results from premature cessation of the growth phase and a shift of a large number of follicles to the resting state. As a new growth phase begins, the telogen follicles inevitably shed the resting hairs. The number of hairs lost each day increases strikingly, often leading to diffuse alopecia. This mechanism is the common pathway for loss of hair in postpartal, postfebrile, neonatal, and psychogenic defluvium. Loss of hair follows the stress situation by three to four months and heralds the regrowth of a new anagen crop. As Kligman [3] has pointed out, when the hair loss becomes overtly manifest, regeneration is well on its way.

Toxic Effects

Intoxication from certain substances, either topically applied, or ingested, has resulted in loss of hair. Many rodenticides and insecticides contain thallium, which, when accidentally ingested, will cause a sudden loss of hair that can become diffuse. Presence of the metal may

be determined by urinalysis; its removal will result in regrowth of hair usually within four to eight weeks later.[7]

Topical application of selenium disulfide has been observed to cause dysplasia of hair with resulting depilation.[8] It is, therefore, important to realize that certain shampoos and topical medicaments contain this heavy metal.[9] Regrowth will follow removal of the offending agent.

Chemotherapeutic drugs, such as Methotrexate®, colcemid, Thio-Tepa®, colchicine, and other anti-mitotic, anti-metabolic, and alkylating agents, have been noted to cause temporary loss of hair.[10, 11]

Additional Factors

Psychogenic factors should not be overlooked in patients with hair loss, for unusual and unexplained alopecia is sometimes traceable to the psychologically disturbed patient who constantly pulls at his hair. Neurotic plucking and breaking off of hair have been termed trichotillomania and trichorrhexomania, respectively. Psychiatric treatment may or may not be of benefit, depending upon the severity of the mental aberration.

Congenital alopecia occurs as an ectodermal defect and is irreversible. Fortunately, it is uncommon. Finally, traumatic factors, such as certain square, pointed nylon brushes, have been demonstrated either to cut hair or actually to grasp and pull it from the follicle.[12] Hot combs, shower caps, hair berets, pony tails, and numerous other traumatizing agents may also form curious patterns of alopecia, which should disappear when the offending manipulation is discontinued.

Systematic Approach

A systematic approach is important in management of patients who suffer from hair loss and alopecia. The patient should be questioned regarding mode of onset, duration, and course of the disease, as well as daily routines, exposure to harmful chemicals, and general habits in scalp care. Special attention should be given to shampoos, type of hair brush used, hot combs, techniques of waving and setting hair, and any unusual habits which might traumatize the scalp. The present and past general medical history will uncover any chronic illnesses, habitual use of drugs, or recent medications, such as antimetabolites, alkylating agents, folic acid antagonists, colchicine, or heparin.

Local Examination

The hair should be examined for evidence of ectoparasites, broken hairs, abnormal shape, such as beading or twisting of the shaft, and general strength. The scalp should be inspected for scaling, erythema, folliculitis and atrophy. Brushing or combing the hair in the office will provide specimens for examining the hair bulb to determine whether hairs are coming from anagen or telogen follicles. A woods light will usually expose the fluorescence of common ringworm infections. *Trichophyton tonsurans,* which is nonfluorescent, clinically resembles ordinary dandruff, and is a fairly common cause of diffuse, sometimes permanent, hair loss. If purulent folliculitis is discovered, culture and sensitivity studies should be carried out, for bacterial infections of the scalp are often resistant to measures which would eradicate them readily from other areas of the body.

Puzzling lesions of the scalp, often associated with localized rather than generalized alopecia, should be subjected to biopsy. Pathologic study is often rewarding and may reveal an unsuspected systemic illness, such as lupus erythematosus, sarcoidosis, scleroderma, leukemia, lymphoma, leprosy, or metastatic carcinoma. If hair loss continues without obvious disease of the scalp and if the general picture does not conform to the telogen effluvium syndrome, then one should consider thallium studies of the urine and more searching investigation for occult systemic disease or psychogenic bases, such as trichotillomania.

Management

Management of the patient is variable. A convincing explanation of the process is generally all that is required in male-

patterned alopecia and telogen effluvium. Once the patient understands the basic dynamics, he is prepared to accept the unavoidable in the case of male-patterned alopecia or peacefully to await spontaneous regrowth in the case of telogen effluvium.[3] He is thus spared the expensive, futile treatments of the "miracle hair growers" and avoids becoming a living testimonial for the "hair specialists" when the new anagen growth bursts through, seemingly the result of massages and greasy inunctions.

In dealing with infectious disease of the scalp, early diagnosis and energetic treatment may be crucial in prevention of extensive cicatricial alopecia. A smouldering chronic bacterial infection of the scalp will relentlessly dissect from one follicle to the next, resulting in fibrosis and permanent alopecia. Bed rest, topical antibiotics, and antibacterial hot compresses combined with specific systemic antibiotics will generally suffice.

Fungous infections of the hairs and scalp are best combatted by Griseofulvin. In *Trichophyton tonsurans* infections, scarring may be extensive if the disease is allowed to progress untreated, and microsporum infection should be treated before the formation of kerion to prevent undesirable scarring.

Regrowth

In alopecia areata eventual regrowth can usually be anticipated in the bald spots. However, the period of alopecia may persist for several months, and therapy is indicated in selected cases because of the cosmetic defect. By tugging the hairs at the periphery of the bald spots, the examiner can determine whether the defluvium is still progressing or is stable. If it is still in the active stage, the patient may be warned to expect additional hair loss and will not falsely assume that the treatment itself promoted additional defluvium. In patients in whom therapy seems indicated, systemic administration and local infiltration of corticosteroids are effective in stimulating regrowth of hair.[13, 14] Local injection is the preferred route unless the alopecia is too extensive. When hair is restored, repeated injections every few weeks are often necessary to sustain the hairs.

When drugs are the offending agents, cessation of medication and patience are sufficient to alleviate the loss of hair. Management of hair loss secondary to the many systemic and cutaneous diseases which affect the scalp should be directed toward control of the illness: the degree of regeneration depends upon the nature of the disease and amount of permanent follicular damage which has occurred.

Summary

Certain prognostic features of alopecias allow classification of the disease under three general headings. The first class consists of alopecias that tend to be irreversible and are unaffected by treatment: male pattern baldness, cicatricial alopecias, and congenital ectodermal defects. The second category includes hair loss which is often reversed or arrested when properly treated: hair loss from heavy metals, cancer chemotherapeutics, intoxicants, fungous and bacterial infections, trauma, and certain systemic illnesses, such as syphilis and pemphigus. The third category contains alopecias that are generally considered to be spontaneously reversible, i.e., various patterns of alopecia areata and telogen effluvium.

The patient with loss of hair does not present a complete enigma. The physician who approaches the problem in an orderly fashion, keeping basic concepts foremost in his mind, can arrive at a satisfactory general diagnosis which allows him to advise his patient properly.

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Discussion

Dr. Henry W. Jolly, Jr. (Baton Rouge): I should like to thank the authors for allowing me to study their paper and commend them for what I consider an excellent treatise on a difficult problem.

I think that we should all be mindful that in a sense, we are studying regional dermatology (with one or two exceptions) and are in danger of elevating a symptom and/or a clinical finding to the dignity of a disease. I am in no way saying that we are wrong for in our present state of knowledge I do not think that we could intelligently do otherwise. This is not true of hair loss alone for we similarly classify papulosquamous diseases, bullous dermatoses, exfoliative dermatitides, etc.

I have a very definite feeling that in my practice a chief complaint of "hair loss" is on the rise, an experience apparently shared by others.

The anagen-telogen phase of hair follicle behavior is most interesting and unique. No other secretory, excretory, glandular or appendicular organ has any comparable cycle. The nails, supposedly closely related embryologically do not behave in any similar manner. It has been postulated that during pregnancy hormonal factors discourage anagen hair follicles from changing into telogen follicles in the "normal" cycle of percentage. Therefore, after delivery with the accompanying reversion to non-pregnant hormonal balance those follicles that would have normally changed from anagen to telogen had the pregnancy not occurred, now do so at a rapid rate or possibly en masse. This is a more or less compensatory pause, shall we call it, resulting in the postpartal alopecia which occurs two or three months later.

In the treatment of alopecia areata, it has not been my experience that reassurance is enough in the average case. These people and others who are losing hair on any etiologic basis are very emotionally disturbed sometimes to the point of a near psychosis. I feel that these people, suffering from some degree of psychological trauma, should be given some form of sedation. I also feel that if the scalp per se is not perfect by repeated examination, it should be treated. I refer particularly to the frequently found accompanying seborrhea wholly mindful of the expressed opinions of some that the superficial dermatitis of seborrhea should not affect the deep-seated hair follicles. The effectiveness of painting the areata areas with phenol, the use of liver extract, the administration of vitamins are certainly debatable and should be left to the discretion of the therapist depending upon his or her experiences in the past. Disturbances in the basal metabolism are sometimes marked in these individuals. I can recall many cases where once this abnormality was discovered and appropriate therapy instituted, phenomenal recovery followed. In saying this, I am not blind to the fact that this is a reversible disease and such opinions and impressions could easily be coincidental and therefore misleading.

I have been very interested of late in the use of steroids in alopecia areata and would like to pass on several observations, some of which I have noted personally and some of which have been also reported by others. (1) The hairs produced by the intralesion injection of this drug are more frequently pigmented than the usual white hairs seen in the spontaneous resolution cases. (2) Cases of extensive areata when given systemic steroids feel that their normal hairs (in non-areata areas) grow more rapidly. They need to shave more often for example.

There are two additional syndromes I should like to mention. The first is diffuse hair loss, frequently marked in the anterior central scalp. This is most common in apparently normal adult females in their twenties and thirties. This is the problem I feel is so much on the rise today and for which no one has yet successfully offered an explanation. I do not have the answer. I wonder if this could be the telogen effluvium referred to by Dr. Kligman on a psychogenic basis and would hope that the authors would pursue this possibility. However, I also wonder that if selenium disulfide, a simple chemical, can cause dysplasia, why cannot other chemicals so frequently used these days in the care of the hair and scalp cause the same thing? I feel that anyone with any hair or scalp disease including hair loss should not use any chemicals of any nature in the hair or on the scalp except those prescribed by their physician.

The second syndrome I would like to stress is climacteric hair loss. I find that this is a fairly common thing. In these cases, estrogens are very effective and in most cases the dosage re-

quired is so small that side effects are a rarity. Untreated, some of these cases can become severe and extensive.

In conclusion I have found this paper stimulating and feel that we should all be grateful to the authors for bringing this subject into focus so clearly. They are to be congratulated for an excellent presentation.

Hope for New Steroidal Agents

During the last eight years much knowledge has been gained regarding the effects of chemical alterations on the physiologic properties of steroids. It is hoped that the pharmaceutical industry will continue to devise and test new modified steroidal compounds as it seems reasonable to expect, as more information regarding structure-function relationships is accumulated, that chemists may be able to create anti-inflammatory steroidal agents which are more efficient and safer than those that are now available. It would indeed be a severe blow to the progress of medical research if legislation is approved that would discourage continued efforts to modify the molecular structures of steroids and to impede the introduction of new drugs that may result from such effort.—Edward B. Boland, M. D., University of Southern California School of Medicine, to Senate Subcommittee on Antitrust and Monopoly.

Wegener's Granulomatosis*

• A case is described with characteristic anatomical and clinical findings that which existed only five weeks from onset until death.

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A rather unusual syndrome consisting of necrotizing lesions in the upper air passages or in the lower respiratory tree; generalized focal necrotizing vasculitis involving both arteries and veins in the lungs and occasionally elsewhere; glomerulitis characterized by necrosis and thrombosis of vascular loops or lobes of glomerular tufts with capsular adhesions and periglomerular involvement was categorized by Wegener in 1936 and Klings in 1931. Wegener first attached the name "rhinogenic granuloma" to the syndrome, which was later termed "necrotizing granulomatosis with angiitis" by Godman and Churg.[2] It is the purpose of this paper to add another case to the small number previously reported and to briefly discuss pathological aspects of the disease.

Case Report

Mr. D.S., a 39 year old white, male, truck driver was admitted to Hotel Dieu, New Orleans, on March 21, 1959, with a three week history of cough, hemoptysis, upper respiratory tract infection and pleuritic type pain in the right chest. There had been associated fever, anorexia and weight loss. In the early part of his illness the cough was dry, but later became productive of copious amounts of yellowish red to frankly bloody sputum. He had also noted a bloody, mucoid nasal discharge, more marked from the left side, and an ulceration on the ventral surface of the tongue. During the two weeks immediately prior to admission he had noted recurrent, painful swelling and redness of the wrists, shoulders, ankles and knees. The arthritis had almost prevented him from walking.

Review of systems was non-contributory.

Past history revealed a hernioplasty in 1944. Several teeth had been extracted three or four weeks prior to admission. There was no past history of asthma, allergies, pulmonary or cardiac disease or hypertension. No family history of allergy, tuberculosis, cardiac or pulmonary disease was obtained.

Physical examination on admission revealed a well developed thin white male who appeared chronically ill. Blood pressure was 130/80; pulse 100/min. and regular; temperature 100.2° F; respirations, 24/min. Examination of ears, nose and throat by a consultant revealed normal ears; ulcerogranular lesions of the nasal septum and mucosa of the vestibule which bled very easily. In the area of the frenulum of the tongue, there was a deep ulcerating lesion, the base of which was covered by a friable granular material. The borders were irregular. A similar, but more superficial, lesion was noted in the right retro-molar area. The naso-pharynx was found to be diffusely involved by a superficial ulcerogranular lesion which was friable and bled easily. The chest was symmetrical and thoracic expansion was equal. On auscultation, expiratory wheezes were heard over the entire right posterior lung field, in the right supraclavicular area and medial to the right scapula. The heart was normal to auscultation and percussion; rhythm was regular and sinus type. The abdomen was soft and flattened. The liver and kidneys were not palpable, but the spleen was felt by one observer. No tenderness was noted and no masses were palpated. The extremities were symmetrical. Tenderness, swelling and erythema were noted over the right wrist and both ankles, with slight limitation of motion. Peripheral pulsations were bilaterally equal.

On admission, hemoglobin was 10.3 gms., hematocrit 34 per cent, WBC 12,000 with 84 per cent segs, 2 eosinophils, 11 lymphocytes and 3 monocytes. Platelet count (direct method) was 745,000; bleeding time (Duke) 1 min. 20 secs.; clotting time 4 min. (capillary). Urinalysis on March 25, 1959, revealed a clear straw colored urine with specific gravity of 1.021, 1+ albumin (0.03 per cent).

Microscopic examination of the sediment showed 3-5 WBC, 0-3 RBC per high power field; many hyaline casts and occasional finely and

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, Baton Rouge.

coarsely granular casts. BUN on March 29, 1959, was 15 mg. per cent, rising to 25 mg. per cent on April 3, 1959. Blood sugar was 90 mg. per cent on March 22, 1959. Serologic tests for syphilis were negative. Febrile aggultinations, including Brucella, Proteus OX 19, Typhoid H and O, and Paratyphoid A and B were all negative. Six sputum cultures were negative for acid fast bacilli and fungi. Numerous direct smears and concentrates of sputum were negative for acid fast organisms. Bacterial cultures of sputum yielded a Proteus vulgaris sensitive to chloromycetin and tetracycline. Second strength PPD was weakly positive in forty-eight hours. Multiple stool cultures were negative for pathogens.

EPA, lateral and lordotic views of the chest on March 21, 1959, revealed a fairly large area of dense parenchymal consolidation within the right apex. Repeat views ten days later, revealed a progression of the lesions with appearance of fresh lesions at the level of the second right intercostal space. The lower lung fields remained clear. At no time was there evidence of effusion.

An electrocardiogram on March 30, 1959, was interpreted as within normal limits.

Clinical Course

Initial therapy consisted of aspirin, to which the arthritic symptoms responded, penicillin, therapeutic vitamins and whole blood transfusions. With lack of clinical improvement after several days of therapy, and in the face of highly suggestive radiological findings, INH and PAS were started on March 27, 1959. With the isolation of Proteus from the sputum, chloromycetin was begun. The patient continued a febrile course from admission to death with daily temperature spikes up to 100-101° F.

On March 27, 1959, purpuric lesions appeared over the ankles, elbows and hands, and by March 31, the face was involved. The older purpuric spots were slightly elevated with pale centers. This reaction was thought to be a Henoch Schonlein type of purpura (allergic purpura), and subsided without specific therapy. A CBC on March 30 revealed a hemoglobin of 8.0 gms.; PCV 28 per cent; WBC 30,000 with 88 segs, 2 eosinophils, 6 lymphocytes and 4 monocytes. The smear revealed anisocytosis and hypochromia. Two days after the onset of skin purpura the patient developed cramping lower abdominal pain and watery, foul smelling diarrhea. Several stool cultures were negative for pathogens, and no ova, cysts or parasites were found on direct smear. Nausea and vomiting ensued over the next two days in association with numerous dark brown, jelly-like stools which also contained bright and dark red blood. This type of diarrhea continued until the patient expired.

With progression of pulmonary lesions, continued hemoptosis and onset of hoarseness, bronchoscopy was performed on April 2, 1954. The larynx was edematous and injected but no lesions were noted. The mucosa of the hypopharynx was edematous with scattered small superficial ulcerations. The tracheal mucosa was similar in appearance. The tracheal mucosa at the carina was granular, ulcerated and bled easily. The main stem bronchus supplying the right lower lobe was stenotic with obliteration of the mucosal pattern by a diffuse ulcerogranular inflammation. The left main stem bronchus was edematous and injected but showed no specific lesions. Biopsies and cultures were taken from tongue, nasopharynx and right main stem bronchus.

By April 3, 1959, dysphagia and inability to cough, associated with the patient's continued deterioration and disorientation necessitated tracheostomy. The patient's course progressed rapidly following the onset of dysphagia and death occurred on April 4, 1959, the fourteenth hospital day and five weeks after onset of symptoms. Terminally, temperature spiked to 103-104° F daily.

Pathological Findings

At the time of necropsy the body was well developed but emaciated, and fading ecchymotic areas were visible over the lower extremities. The pertinent anatomical findings in this case were limited to the oral cavity, nasopharynx, trachea, lower respiratory tract, lungs, spleen and kidneys. The heart, liver and adrenals were essentially normal both grossly and microscopically.

Oral Cavity

Surgical biopsy of the ulcerated lesion of the tongue and molar area of buccal mucosa prior to death were similar in appearance microscopically. The mucosa over the molar area was thickened and in areas showed epithelial hyperplasia. Within the submucosa there was a dense, acute inflammatory infiltrate which extended deeply into the underlying tissues. Arteries and veins both within and adjacent to the areas of acute inflammation were involved by a vasculitis consisting of a loose endothelial proliferation and edema, which was in most instances circumferential and occasionally eccentric in location. In some instances the thickened intima obliterated the vascular lumen. Polymorphonuclear leukocytes were found within the proliferating endothelial layer and separating the muscle fibers of arterial walls. In the majority of the lesions, no necrosis or granulomata were noted within the vessel walls. Scattered throughout the submucosa were areas of coagulation necrosis without evidence of granulomatous inflammation. The tongue showed deep mucosal ulceration overlain by colonies of bacteria. There was a dense submucosal inflammatory infiltrate which

extended and separated muscle fibers, and was composed largely of PMN with occasional lymphocyte and macrophage. Areas of necrosis were also present. Arteries and veins within the involved areas were the site of an inflammatory, proliferation as described, with the addition of scattered thrombosed vessels.

Respiratory Tract

Grossly, the tracheobronchial mucosa was ulcerated, edematous and in areas necrotic in appearance. A purulent mucoid exudate filled a large part of the bronchial tree, along with aspirated gastric contents. Microscopically the trachea was the site of a necrotizing, ulcerative process with destruction of the basement membrane, necrosis and acute inflammation involving mucous glands, and perichrondrium. Arteries (small) and veins were involved by an inflammatory process similar to that described with the addition of foci of necrosis of the vessel wall and thrombosis. Microscopically the bronchial mucosa was similarly involved.

The pulmonary pathology was characterized grossly by a fibrino-purulent pleuritic reaction over the visceral pleura of both upper lobes. The lungs were increased in volume and heavier than normal. On cut surface multiple, circumscribed, gray white lesions which bulged slightly above the surface were noted. These were more prominent in the right upper lobe and measured from 1-5 centimeters in diameter. Close inspection of the lesions revealed areas of liquefactive necrosis and cystic degeneration, central in location. The surrounding and adjacent stroma of the nodules was rubbery to moderately firm in consistency.

Microscopically varying sized areas of fairly well circumscribed coagulative necrosis were seen. In some areas the necrosis had progressed to liquefaction. The resemblance to caseous necrosis in some areas was striking, with obliteration of architectural structure and scattered "nuclear dust" and cellular debri. However, this was interpreted as a variance of combined coagulation and liquefactive necrosis. In other areas fibrinoid type of necrosis was apparent particularly in vessel walls, and intima. Within the necrotic debri there was scant inflammatory infiltrate; that being present composed largely of polymorphonuclear leukocytes, with scattered lymphocytes and macrophages. Surrounding the necrotic foci was a luxuriant granulation tissue with fibroblastic proliferation associated with scattered plasma cells and lymphocytes. No organisms were demonstrated in multiple acid fast and Schiff stained sections of lung. Only an occasional giant cell was noted and these were of both Langhan's and foreign body type. In scattered areas dense hyalinized scarring replaced pulmonary parenchyma. All sections of involved lung revealed a vasculitis involving both arteries and veins. The involved vessels were mainly within the necrotic tissue, but several vessels separate, and apart from the involved lung, showed diffuse involvement. The vasculitis was similar histologically to that seen in the tongue, buccal mucosa and trachea. The vessel involvement in the lungs appeared more severe and generalized. Alveoli adjacent to necrotic areas contained both pigment laden macrophages and varying amounts of fibrin and neutrophilic leukocytes.

Spleen

The spleen was markedly enlarged and weighed 810 grams. The capsule superiorly was roughened and adherent to the inferior surface of the diaphragm. The upper two-thirds of the spleen was composed of a large cystic cavity filled with dark red, thick material and necrotic debris. Multiple irregular, fairly well outlined gray yellow areas of necrosis were scattered throughout the remaining pulp obliterating normal architectural pattern.

Microscopically there were varying sized areas of coagulative and liquefactive necrosis within the pulp, surrounded by fibroblasts and scattered histiocytes. The follicles were indistinct and scattered trabecules were involved by a peripheral trabeculitis. The vessels within the necrotic portions showed an angiitis similar histologically to that seen within the lungs. Arteries were more generally involved in the spleen than elsewhere. Several arteries were recanalizing.

Kidney

The kidneys weighed 160 gms. (right), and 170 gms. (left). Their capsules stripped with ease revealing smooth, glistening capsular surfaces which were pale brown in color and showed scattered petecchiae. On cut surface the cortices and medullae were of average thickness. Petecchiae were noted scattered throughout the cortex, bilaterally.

Microscopically, the glomeruli throughout scattered portions of the cortex were swollen, filling Bowman's space. There were multiple foci of fibrinoid necrosis involving glomerular capillaries with associated thrombosis. Red cells and a homogeneous eosinophilic material lay within capsular spaces. Other glomeruli showed only a minimal degree of involvement with focal collections of neutrophils in the capsular spaces. No more than 30 per cent of glomeruli were involved. Scattered groups of proximal convoluted and collecting tubules were distended with red cells. The tubular epithelium was not involved. Many hyaline casts were present throughout remaining portions of the tubular system. Arteries and veins in multiple sections failed to show any form of vasculitis or granulomata.

Small Bowel and Colon

Grossly, the small bowel was distended and filled with large amounts of altered blood. The

mucosa throughout was hyperemic and edematous. Within the jejunum there were occasional sharply outlined ulcers, the margins of which were moderately distinct. The ulcer bases were covered by yellowish necrotic debris. In the terminal ileum, cecum and ascending colon, the ulcers were increased in numbers and were in areas confluent. There were no areas of perforation noted, but in some places the serosa only, remained.

Microscopically, there were diffuse areas of acute mucosal ulceration and necrosis with a dense neutrophilic infiltrate submucosally and separating muscle bundles. Arteries and veins within the inflammatory reaction showed the most severe changes which were similar to those within the lungs. However, in the bowel, there were more vessels completely occluded by the process. A fibrino-purulent exudate covered the serosal surface.

Discussion

This case presents the clinical and anatomical findings so summarily grouped and classified by Godman and Churg[2] as "necrotizing respiratory granulomatosis angiitis", (Wegener's Granulomatosis). Clinically, the findings and course were that of a febrile disease which began in the pulmonary system, involved upper respiratory tract and sinuses, followed a rather rapid downhill course terminating in a generalized hypersensitivity phenomenon with marked bowel involvement. In common with other cases previously described in the literature, there was no clinical history of allergy, asthma, hypertension or prior pulmonary disease. The duration of illness in this particular case was shorter than the average reported in the literature, being five weeks, as compared to an average of six months in other cases.[1-3]

An interesting facet of this case was the sudden development on the sixth hospital day, of purpura, which in the light of normal coagulation studies was interpreted as being of an allergic type (Henoch Schonlein) ; another manifestation of hypersensitivity. With a negative history that this purpuric episode forms one generalized component of the syndrome. The purpura spontaneously subsided, but was followed within twenty-four to thirty-six hours by the onset of cramping abdominal pain and bloody diarrhea which persisted until the patient's death, and certainly played a part in the terminal episode.

Anatomically, the cases studied by Godman and Churg which have been characterized by the appearance of the following characteristics[2]:

of drug allergies, one can only surmise

1) necrotizing granulomatous lesions in the upper air passages (nose, paranasal sinuses, nasopharynx, glottis or adjacent regions) or in the lower respiratory tract or both.

2) generalized focal necrotizing vasculitis, involving both arteries and veins, almost always in the lungs and more or less widely disseminated in other sites.

3) glomerulitis, characterized by necrosis (and thrombosis) of loops or lobes of the capillary tuft, capsular adhesions and evolution as a granulomatous lesion.

In this particular case, several differences were noted, which, however, do not detract from the overall picture. Evolution of the renal lesions into granulomata was not noted, nor were renal vessels other than glomerular capillaries involved. The short duration of the patient's illness most likely accounts for the absence of renal granulomata. The bowel and colonic involvement was more diffuse and severe than in other cases reviewed[1-3]. Bowel involvement occurred in only approximately 20 per cent of other cases. The onset of the bowel lesions coincident with the onset of purpura lends support to an internal manifestation of hypersensitivity.

The character of the pulmonary lesions in this case, though similar grossly and histologically to other cases, parallels the short duration of this man's illness. The lesions both in the upper air passages and lung are largely acute ulcerative lesions with massive necrosis and only scant attempt at healing. The paucity of a granulomatous type of inflammatory process also coincides with the short duration of the disease. Respiratory tract lesions formed by far the predominant pathological changes in this case and all other cases of Wegener's granulomatosis. The vasculitis involved not only arteries but veins

as well and was most prominent in the necrotic areas, though vessels adjacent to and leading into the necrotic foci were involved also. The majority of the vessels were the site of a proliferative angiitis limited in most instances to endothelial proliferation and edema with rare foci of necrosis within the vessel wall and infrequent thrombosis. Vessels within the mouth, tongue, nasopharynx, spleen, small bowel and colon were similarly involved.

The angiitis seen in this and other reported cases is not unlike that described by Zeek as "hypersensitivity angiitis"[4], and Godman and Churg as the "microscopic form of periarteritis nodosa"[2]. In fact, as has been pointed out by Godman and Churg, any one of the features of Wegener's granulomatosis can be attributed to allergic or hypersensitivity phenomenon, particularly the vascular changes. The presence of necrotizing granulomata within the respiratory tract and their concentration there, however, serve to separate these cases from ordinary forms of periarteritis nodosa.

The glomerular changes seen in this case and others are not specific in themselves and have been seen in numerous other conditions, i.e., bacterial endocarditis, sepsis, and the "microscopic form of periarteritis", to mention a few. The associated renal granulomata apparently represent a later stage in the evolution of the disease, and as mentioned, were not present in this case.

An explanation for the peculiar concentration of lesions in the lungs and upper air passages has been offered by Godman and Churg[2]. They consider the lungs or upper air passages the primary site or target organ for attack by an agent, probably microbial, with persistent high concentration in this area over a long duration. The probability that the upper air passages and lungs represent the "shock" tissues and become more highly sensitized is also mentioned. The generalized vascular lesions, nephritis and granulomata occur later during the course of the disease either as a manifestation of generalized hypersensitivity or as a result of the release of an allergen or break-down product into the general circulation. The findings in this case support the priority of respiratory lesions, with disseminated vasculitis occurring later in the course of the disease. In this particular case, the disease process had not been actively present over a sufficient period of time to produce the typical granulomatous lesions described.

Summary

A case is described which at autopsy presented characteristic necrotizing respiratory lesions, focal necrotizing glomerulitis and diffuse angiitis. The anatomical and clinical findings are similar to those described by Wegener and others and identified as Wegener's granulomatosis. The short duration of illness in this case negated development of sufficient granulomatous response.

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Minor Toxic Effects in Patients Treated With Glucosamine Oxytetracycline (Cosa Terramycin®)

• A clinical study of the minor toxic effects of glucosamine oxytetracycline is objectively presented. Ten per cent of patients had toxic effects and treatment was interrupted in six per cent.

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MINOR toxic effects of the tetracycline antibiotics on the gastrointestinal tract are well known. Most recent information would indicate that no significant difference in minor toxic effects exists for the original three compounds: chlortetracycline (Aureomycin®), oxytetracycline (Terramycin®), and tetracycline (Achromycin®, Panmycin®, Tetracyn®, or Tetrex®).[3] It is also apparent that demethylchlortetracycline (Declomycin®) will probably be no different in this regard,[4] and phototoxicity is being reported associated with its use.[6] Chloramphenicol, another broad-spectrum antibiotic, although relatively free of *minor* toxic effects has the serious *major* toxic effect of bone marrow depression in some individuals.[5] This should restrict its use to treatment of patients with a few select infections as it is presently impossible to predict which patients will develop bone marrow depression. *Major* toxic effects due to the tetracyclines are rare, but the annoying minor toxic effects experienced by some patients keep the tetracyclines from being ideal broad-spectrum antibiotics. More effort devoted to eliminating these minor toxic effects is needed.

Recently it has been discovered that the addition of glucosamine (2-amino-d glucose) to tetracycline or oxytetracycline increases the absorption of these compounds from the gastro-intestinal tract and results in higher blood levels than obtained with the parent compound alone.[1] Glucosamine is a simple amino acid sugar that is found in the body in many tissues, but its exact function is unknown. From superficial clinical impressions it appeared that glucosamine tetracycline (Cosa Tetracyn®) and glucosamine oxytetracycline (Cosa Terramycin®) caused less gastrointestinal minor toxic effects than tetracyclines without glucosamine. In order to prove or disprove these clinical impressions, an evaluation of glucosamine oxytetracycline at a large city hospital was undertaken.

Method

The patients studied were mainly those admitted to the 108 bed Medical Service of the Minneapolis General Hospital. A few otolaryngology patients who were kept in the same wards were also included in the study. It was decided to use glucosamine oxytetracycline in place of other broad-spectrum antibiotics when such an antibiotic was indicated. In order to include at least 100 patients in this investigation it was conducted over a four month period (February 1, 1961 through May 31, 1961).

The evaluation of the minor toxic effects of glucosamine oxytetracycline preceded in the following fashion: (1) An intern or resident prescribed the antibiotic. (2) An explanation was made to the patient by a nurse informing him that daily inquiry would be made regarding certain

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symptoms. (3) A printed form containing a list of anticipated minor toxic effects was placed in the patient's chart. The scale used to evaluate these effects is shown in Table 1. (4) Each day of treatment the possible minor toxic effects as well as the number of stools passed by the patient that day were recorded by one of the nurses. The minor toxic effects listed in Table 2 represent those thought to be due to glucosamine oxytetracycline after analysis of the collected data.

TABLE 1
SCALE USED BY NURSES TO EVALUATE MINOR TOXIC EFFECTS OF GLUCOSAMINE OXYTETRACYCLINE

0	=	None
1+	=	Very minor change elicited only by careful questioning
2+	=	Definite change but of no concern to the patient
3+	=	Patient spontaneously complains of minor toxic effect, but this is not intolerable
4+	=	Intolerable

TABLE 2
MINOR TOXIC EFFECTS EVALUATED

1. Anorexia
2. Nausea
3. Vomiting
4. Epigastric distress
5. Stomach cramps
6. Flatulence
7. Diarrhea
8. Perianal itching

The courses of therapy with glucosamine oxytetracycline were from one and a half to twenty-two days in length. The treatment schedule was one gram of glucosamine oxytetracycline per day except for 2 patients who received two grams per day. A 250 milligram capsule was given every six hours in most instances. A suspension of glucosamine oxytetracycline (Cosa Terrabon®) was used alone or following a course of the capsules in eleven periods of treatment.

Results

There were 113 patients treated with glucosamine oxytetracycline over the four month period. Seven patients were not treated more than one day and 3 patients had inadequate data for evaluating the minor toxic effects. These 10 patients were excluded from the present study leaving a total of 103 patients for evaluation. None of the patients excluded were intolerant to the antibiotic. Two patients were given two separate courses of therapy and one patient received three courses. The total number of separate periods of treatment in the 103 patients was, therefore, one hundred seven.

The age and sex of the patients treated were similar to that usually found on the Medicine Service. There were 67 males and 40 females. Thirty-one per cent of the patients were less than 51 years old, whereas 50 per cent were over 60 years old. This large number of elderly people created somewhat of a problem in evaluating some of the minor toxic effects mainly because as a group they tended to complain more vigorously about changes from their accustomed "normal".

The reason for treatment with glucosamine oxytetracycline was pneumonia in 48 instances, genitourinary tract infection in 20, both of the preceding in 3, prophylaxis (mainly for fractured mandibles) in 10, fever of unknown origin in 8, bronchitis in 8, and miscellaneous infections such as perianal abscess, cholangitis, infected burn, and septicemia in 10. Fourteen of the 103 patients had diabetes mellitus, 11 had Laennec's cirrhosis, and 2 had both disorders. An organic or functional psychiatric diagnosis was made in 15 patients. This most commonly was an organic mental syndrome secondary to cerebral arteriosclerosis.

Although this investigation was not carried out to evaluate the effectiveness of glucosamine oxytetracycline, it is interesting to note that there were eight antibiotic failures in this group of 97 periods of treatment for infection (the ten other treatment periods were prophylactic and none of these patients became infected). Six periods of treatment failed because little if any improvement was seen and the infections were considered unchanged. Three of these patients were also receiving penicillin and 1 other patient had received chloramphenicol before treatment

with glucosamine oxytetracycline. The other two periods were the only ones considered to be complete antibiotic failures. In one the patient died of enterocolitis due to *Staphylococcus aureus,* coagulase positive, after seven days of treatment for pneumonia with penicillin and glucosamine oxytetracycline. The other patient was given glucosamine oxytetracycline alone for a genito-urinary tract infection due to *Escherichia coli.* After ten days of therapy the patient died. A necropsy examination revealed acute myocardial infarction, purulent pericarditis, as well as active pyelitis. Postmortem cultures were not obtained. Ten other patients in this series died of diseases other than the infection for which glucosamine oxytetracycline was employed.

In 60 instances glucosamine oxytetracycline constituted the only antibiotic therapy given. The additional antibiotic given to the remaining 47 was most commonly penicillin.

The patients received glucosamine oxytetracycline for a total of 890.5 days. On only twenty-eight patient treatment days did the nurses fail to grade each minor toxic effect, and on most of these days the patients' responses were considered to be unreliable.

The number of treatment courses with or without minor toxic effects are presented in Table 3 by groups. In order for a treatment course to be placed in Group 1 every treatment day was entirely free of minor toxic effects. This was the case in 32 (30 per cent) of the 107 treatment courses. The inclusion of a treatment course in the remaining groups was based on the highest grade recorded for any one or more minor toxic effects on any one or more days. A treatment course with a maximum grade of one plus (Group 2) always had some zero grades as well. This mixture of the maximum and lower grades was found in all of the treatment courses comprising Groups 2, 3, 4 and 5. Thirty-seven (34.6 per cent) courses of treatment were free of minor toxic effects that would interfere with therapy (Groups 2 and 3).

TABLE 3
EXTENT OF MINOR TOXIC EFFECTS RECORDED DURING 107 COURSES OF TREATMENT WITH GLUCOSAMINE OXYTETRACYCLINE

Group 1 ("0" only)	32 (29.9 per cent)
Group 2 (at least one 1+)	22 (20.6 per cent)
Group 3 (at least one 2+)	15 (14.0 per cent)
Group 4 (at least one 3+)	31 (29.0 per cent)
Group 5 (at least one 4+)	7 (6.5 per cent)

From a practical standpoint the physician is concerned with the three plus (3+) and four plus (4+) groups. In the three plus (3+) category the patient's complaint of a minor toxic effect was spontaneous and not elicited by questions from the nurses. For one or more days, one or more of the minor toxic effects were classified as three plus (3+) in 31 courses of treatment. In this group anorexia, nausea, vomiting and diarrhea were the most common complaints and are listed in order of decreasing frequency. It was found that the first five minor toxic effects listed in Table 2 were often related.

Analysis of the thirty-one courses of treatment in which a three plus (3+) toxic effect was recorded revealed that in 21 there were medical problems such as uremia, diabetic acidosis, chronic pancreatitis, and acute myocardial infarction that could adequately account for the complaints. In addition there were relatively few days in each of these courses of treatment in which a three plus (3+) recording was made.

It is obvious that an infectious disease process with systemic toxicity may also cause some of the same symptoms considered as minor toxic effects. Nevertheless, it was felt that glucosamine oxytetracycline was in part if not totally responsible for the patients' complaints in the remaining ten courses of treatment (each representing an individual patient) with three plus (3+) recordings. Therefore, spontaneous patient complaint of a minor toxic effect thought to be due to treatment with glucosamine oxytetracycline was noted in 10 (9.7 per cent) of the 103 patients. In 3 patients diarrhea was present two days and in 4 it was present one day. Flatulence was present twenty days

in 6 patients (including 4 of those having diarrhea). Anorexia was present in 3 patients for sixteen treatment days, nausea was present in 3 patients for eight treatment days, epigastric distress was present in 2 patients for four treatment days, stomach cramps were present in 1 patient for one treatment day, and perianal itching was noted in 1 patient for two treatment days. In this group of 10 patients three plus (3+) recordings for one or more minor side effects were made on sixty-one days during a total of eighty-two days of treatment and evaluation.

In 7 patients glucosamine oxytetracycline was discontinued because of minor toxic effects that were attributed to the antibiotic. In 1 instance the patient received digitalis for paroxysmal atrial tachycardia at the same time she was given glucosamine oxytetracycline for bronchitis. She became nauseated and vomited. In retrospect her reaction may have been due to the digitalis. This is supported by the fact that one month later she received a nine day course of glucosamine oxytetracycline without nausea, vomiting or other minor toxic effects. The remaining 6 patients seemed to exhibit genuine intolerance to the antibiotic. Perhaps they should more properly be regarded as having *major* toxic effects although in no instance were these effects life threatening.

Of those not tolerating glucosamine oxytetracycline there were 4 women between the age of 35 and 59 and 2 men, one 48 and one 71 years of age. One patient had diarrhea which ceased when the antibiotic was discontinued and reappeared when it was restarted. Nausea and vomiting were exhibited by the remaining 5 patients and this diminished or disappeared when the glucosamine oxytetracycline was discontinued. Two of these developed nausea and vomiting while receiving capsules of glucosamine oxytetracycline and these symptoms continued when they were given the suspension instead.

The larger amounts of tetracyclines characteristically are more likely to cause minor toxic effects. Diarrhea, a rash around the rectum, and epigastric distress (graded 3+) for two days, were noted in 1 patient receiving 500 milligrams of glucosamine oxytetracycline every six hours for nine days. The other patient receiving 500 milligrams every six hours had a five day course and noted diarrhea only on the first day.

Discussion

It is difficult to make an accurate appraisal of the minor toxic effects of any drug that is administered to an already ill patient. This is especially true in the case of infectious diseases when systemic toxicity is often present. Other drugs the patient may be receiving concurrently with the one being evaluated may have similar minor toxic effects. In 16 patients with three or four plus recordings thought to be due to glucosamine oxytetracycline this does not seem to be a factor.

The psychological makeup of the individual patient is obviously important in evaluating drug tolerance as some patients exaggerate and others minimize certain symptoms. Males and females react differently to various symptoms. An example of this is found in the present study where 6 male patients spontaneously complained of flatulence, whereas no female patient did.

The physicians directly responsible for the patients are usually more concerned with the primary disease process and the *major* toxic effects of the drugs being used than the minor toxic effects such as evaluated in the present study. In a study of this type one should not rely only on the progress notes of the responsible physicians. This was borne out in the present study by the fact that the only mention of minor toxic effects of glucosamine oxytetracycline noted in the doctors' progress notes were those on patients who were thought to be definitely intolerant to the drug. The present system of rotation of residents and interns in most municipal hospitals creates additional problems if these physicians are utilized to carry on this type of investigation. Nurses are unlikely to be biased concerning drug reac-

tions, more likely to be compulsive about making daily recordings, and certainly, as the present study indicates, are more likely to elicit symptoms that the patient considers minor.

One cannot justify a controlled study using placebos in the treatment of infectious diseases to evaluate minor toxic effects of antibiotics. Some such studies have been done with normal individuals, some receiving the antibiotic and some receiving placebos.[2] This approach has the disadvantage of not being directly applicable to the situation in which the antibiotic will be used for therapeutic effect.

Conclusions

(1) Glucosamine oxytetracycline is an effective broad-spectrum antibiotic. (2) The addition of glucosamine to the oxytetracycline structure does not appear to significantly increase or decrease the incidence of minor toxic effects on the gastrointestinal tract. (3) There was no instance of allergic reaction to glucosamine oxytetracycline. Staphylococcal pseudomembraneous enterocolitis following a seven day course of glucosamine oxytetrcycline and penicillin occurred in one instance. (4) Anorexia was the most frequent minor toxic effect spontaneously complained of by the patient; however, nausea and vomiting were the most serious and resulted in 5 of the 6 instances of intolerance to glucosamine oxytetracycline. (5) The use of nurses and the scale presented for grading minor toxic effects in patients receiving antibiotics is thought to eliminate some of the many difficulties inherent in an accurate investigation of this type.

Summary

One hundred three patients received 107 courses of treatment (10 as prophylaxis only) with glucosamine oxytetracycline over a four month period at the Minneapolis General Hospital. The courses of therapy were from one and a half to twenty-two days in length and were primarily for pneumonia and genito-urinary tract infections.

Ten (9.7 per cent) of the 103 patients spontaneously complained of one or more symptoms which were thought to represent minor toxic effects of glucosamine oxytetracycline. Treatment with glucosamine oxytetracycline had to be interrupted in 6 (5.8 per cent) patients because of intolerance. Nausea and vomiting was the reason in 5 and diarrhea in one. Therefore, objectionable minor toxic effects thought to be due to treatment with glucosamine oxytetracycline were noted in 16 (15.5 per cent) of the 103 patients treated with that antibiotic. It is felt that the addition of glucosamine oxytetracycline has not significantly altered the minor toxic effects of oxytetracycline.

Acknowledgement

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Family Self-Help in the Event of a National Disaster*

• Every family in the United States is a potential survivor of a nuclear attack upon this country and, therefore, must be prepared to exist isolated from outside assistance for an extended period of time. Because the services of a physician may not be available during this time, the family may be required to meet its own health and medical needs.

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THE first nuclear bomb ever used in warfare, had an explosure force equivalent to 20,000 tons of TNT. This was in 1945. It was not until September 23, 1949, that Soviet Russia exploded its first atomic bomb which was of considerably less strength in terms of destruction than were our own weapons—at that time.

Megatons

All of this, of course, occurred some years ago. Since that time, science has vastly improved our capacity to kill. To such a degree that the unit of measurement of destructive force is no longer in thousands of tons but in millions of tons. To give ease to the description of such a force, the jargon of the trade, as the unit of measurement, is the megaton—each megaton being the explosive force equivalent to a million tons of TNT. A one megaton bomb, then, is equivalent in destructive force to 50 old-fashioned Hiroshima type weapons.

If we remember that the first atomic bomb killed or wounded nearly half of Hiroshima's 340,000 people, we can easily visualize what even a modern one megaton weapon, 20 times as destructive, might be capable of doing. To this understanding we must add the public knowledge that some of our own weapons are admittedly in the range of 20 megatons—which means they have the destructive force of 1000 primitive atomic bombs.

To this almost unimaginable destructive force of 20 megatons, we must soberly remember that recently the U. S. S. R. detonated a nuclear blast in the range of 58 megatons and announced they had capabilities of 100 megatons. Presumably, the United States also has weapons of similar or greater destructive potential.

Survival

Such facts give impetuous to the arguments of those who state a nuclear war would mean a new era of destructiveness —one that would be difficult for civilization to survive.

These are indeed sobering facts and are deserving of the widest distribution for public awareness, and yet the important thing for people to remember is that some individuals and some families will survive. It is this salvageable source that is our concern.

Every individual and every family in the United States is a potential survivor of such an attack and must, therefore, be prepared to exist for an extended period of time isolated from outside assistance. This is the reason for shelters and for stockpiling of individual and family supplies of a sufficient amount. In addition, the health needs of the individual and of the family must be met to the best degree possible. This is the reason for the development of the *Family Guide—Emergency Health Care,* a booklet of which a copy was recently mailed to all physicians

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in the United States; this is also the reason for the planning and development of the Medical Self-Help training courses which are now being implemented in many areas.

Following a major national disaster, such as that of a nuclear attack, our survival as a nation will depend on the survival of our people. There can be no survival unless there is adequate mobilization of our health resources and the utilization of our overall medical capabilities. It is obvious that organized health services, as we now know them, will be disrupted or nonexistent in such a disaster; and, in such case, health services will be available only to the degree that there has been adequate preparations of individuals, families, and groups to be self-reliant and self-sufficient. There will be a critical shortage of health resources, of trained personnel, of supplies and of facilities, thereby requiring maximum improvisation and the maximum use of paramedical and medical self-help trained persons to maintain the surviving population's health at the best level possible. It is for this purpose that the concept of Medical Selp-Help training has been developed and is now being implemented.

The fact that such self-care is not a substitute for good medical care by a qualified physician when available should be stressed in the training process. It is recognized that some may be encouraged to try self-treatment even when the services of a physician are available and that deleterious effects might result from improperly applied, delayed or neglected medical treatment. On the other hand, the health education value of such training may prompt many others to seek early medical care, who might not have done so without exposure to the training.

Overriding the possibility of abuse in normal times of the knowledge gained is the urgent need for preparing people to meet their own health requirements to the best of their ability in the event of a national disaster, such as a thermonuclear attack upon this country. This is necessitated by the following assumptions:

1. People may be isolated for extended periods of time in the event of an attack upon this country.
2. Physician population may be reduced to one-half its present size.
3. Organized health services may be delayed by radiation fallout for days or weeks in many communities.
4. The requirements for professional services and other health resources by the casualty and non-casualty survivors may exceed many times the capacity for providing these services and resources. Such circumstances, will require setting up priorities of treatment and shunting large groups of patients, who normally would be given professional care, to self or family care.

Medical Self-Help Training Program

The Medical Self-Help Training Program contains the basic information a person needs in order to preserve life and health in a national emergency. It has the endorsement and support of the American Medical Association which officially recognizes the need to train the public themselves to take care of certain of their medical and surgical needs in the event of such a disaster.

The American Medical Association has recognized the need and has endorsed a structured training program in medical self-help.

The question always seems to arise as to whether or not the training of the lay public in such matters is not simply first aid. The answer to that is an emphatic NO; First aid is the handling of a medical or surgical situation until one can obtain the services of trained health personnel, whereas Medical Self-Help is the handling of medical and surgical situations with the full knowledge that trained medical help is not and may not be available at all for an extended period of time. Although, first aid training is an excellent background as a base on which to build Medical Self-Help training, it does not in any way supplant or preclude the need for a maximum coordinated crash program to train American families in this basic need.

War is the greatest disaster our Nation may have to face. People normally fear the unknown. To most people a "push button" thermonuclear war presents so many unknowns that it is difficult to break through their "fear barrier" and introduce hope for continued existence. This is particularly true, since they may have to depend on themselves alone for their own and their families' survival.

In the wake of disaster, people who know what to do act rationally and effectively. Others, through fear, "react blindly." Fear decreases as knowledge increases. But knowledge alone is not the answer. People must not only know what to do, they must know how and when to do it; and they must be made aware of how much they and their families will benefit from this knowledge.

People can be taught how to save their own and their neighbors' lives. Only through education for individual survival can our national survival be assured.

The Medical Self-Help Training Program is designed to teach people that they *can* survive disaster, including a massive thermonuclear attack, even when professional medical help may not be available for days, weeks or longer.

Since survival in emergency situations depends on doing the right thing at the right time with whatever means are at hand, the aim of this program has been to develop the best methods of teaching people how to care for themselves with what they have available; in other words, to teach self-reliance in the medical emergencies that inevitably follow wide-spread disasters.

Thus, the mission of the Medical Self-Help Training Program is to teach people how to survive disaster in such a way that their recovery from the sudden and fearful impact of this new, overwhelming and hostile situation will be both rapid and effective.

Goals

The successful accomplishment of this mission requires leadership guidance by the medical profession to develop a well informed public through education and training.

To accomplish the objectives, three main goals were set:

1. To initiate a program to train at least one member in each family.
2. To evaluate the effectiveness of the program, and
3. To improve the content and training techniques of the program.

The problem facing us was: How do you train millions of people to meet these needs? What kind of organization is needed to accomplish it?

Several research projects were carried out which have resulted in the development of two of these tools, now ready to be put into use.

Manuals

The first is a reference manual in health aspects of survival started in 1959, designed to serve as a family guide. Eight hundred thousand manuals will be printed this year, of which 300,000 advance copies will be distributed to physicians and allied medical personnel and to key civil defense officials. Eventually, one will be supplied to each family in the United States.

This manual for the American family contains instructions for survival and emergency health care if a physician or organized health services are not available for several days to several weeks.

It was developed by the U. S. Public Health Service under contract with the Office of Civil and Defense Mobilization. The Committee on Disaster Medical Care of the Council on National Security, American Medical Association, assisted and advised in its development.

The first printing will be a restricted distribution to the health, professional, military and civil defense personnel, for the purposes of:

1. Introducing the manual and the Medical Self-Help Training Program.
2. Enlisting support of Medical Self-Help Traiinng through State and local programs.
3. Encouraging participation in the program in the interest of improved National preparedness.

4. Obtaining additional review of content and approach before dissemination to the general public.

Family Guide-Emergency Health Care

This covers the same general topics as are indicated below for the Medical Self-Help Training Kit. The kit and the course in Medical Self-Help Training are based on the survival and health care principles contained in the Family Guide.

Every effort has been made to present all material in simple, non-technical terms, which are readily understandable.

The second project resulted in the development of a Medical Self-Help Training Kit which contains the basic materials necessary to train people to manage their own health needs to an adequate level if such a need arises. The kit as produced is a complete training unit and contains the following items:

1. Instruction guide
2. Introduction to course
3. Introduction to care of injuries
4. Lesson books
5. Student handbooks
6. Filmstrip projector
7. Projection screen
8. Spare projection bulb
9. Filmstrips
10. Extension cord
11. Instructor file case
12. Copy of Family Guide
13. Pointer
14. Red lead pencil
15. China marking pencil
16. Graduation certificate
17. Examination booklets
18. Answer sheets
19. Examination envelope
20. Grading template

In addition, enough printed material for 100 students is packaged separately in four replenishment units.

The kit is self contained and most efficient due to excellent planning, but what about instructors? It should be mentioned that, although instruction by medical and allied professional personnel is the first choice, it is recognized that the relatively small number of professional people for such a vast job necessitates the acceptance of untrained but well motivated lay instructors. In such cases, it is important that guidance and participation by a local physician will be available, especially in some of the lessons.

Thus, the Kit is designed to help the novice become a teacher. It is written in plain language using a minimum of technical terms and avoids complicated descriptions.

The Kit has been reviewed by highly competent authorities in every phase of its production. These include, medical, educational, industrial, scientific, social, and other experts.

One of the major difficulties inherent in putting together a course of this kind has been the need for simplifying and standardizing lesson content and techniques. Differences of opinion in techniques had to be resolved in order to prevent confusion and make it possible for a broad lay audience to understand and remember what is being taught.

Everyone capable of learning a few fundamental techniques can be taught the measures needed to save life following disaster. The course is designed so that ninth grade students can understand it readily. Yet, even those with an advanced education or with considerable first-aid experience should benefit a good deal from the instruction. In other words, it is aimed at reaching the broadest possible general audience.

This course is not intended to compete in any way with courses now being conducted by other national organizations. It is intended, rather, to supplement them, with special emphasis on the major disaster situation, the need for improvisation, and the fact that professional help may not be available. It is hoped that this course will, in fact, further motivate people to take advantage of the many specialized programs already available as well as seek detailed information from their physicians.

Self-Help Training Course

The Self-Help Training Course consists of 12 lessons which can be given in 16 hours of instruction. It is primarily designed to be given in eight 2-hour sessions.

The lessons include the following topics:

Lesson 1. Radioactive Fallout and Shelter—A very simplified presentation of the complicated and technical subject of nuclear radiation. This lesson deals primarily with the problem of radioactive fallout, and describes some simple protective procedures that can be carried out at home.

Lesson 2. Hygiene, Sanitation, and Vermin Control—Teaches simple techniques for personal and environmental cleanliness. It is directed particularly toward predisaster planning, and postdisaster improvisation under unsanitary and crowded conditions where public utility services may not be functioning.

Lesson 3. Water and Food—Assumes that many people will not have available supplies of prestocked food and water. This lesson teaches how to survive with supplies usually available in the home. It recognizes the specific problems of both urban and rural areas, and outlines principles which may be applied by individuals under various environmental conditions.

Lesson 4. Shock—Provides specific information on the recognition of shock symptoms by nonprofessional individuals and treatment in the absence of professional help.

Lesson 5. Bleeding and Bandaging—Universally accepted methods of arresting bleeding and applying dressings and bandages are taught. Emphasis is placed on improvisation with supplies that may be generally found in the home.

Lesson 6. Artificial Respiration — Designed to acquaint the student with and develop competence in the techniques of mouth-to-mouth resuscitation. An alternate method, the back pressure arm-lift, is also included for use in specific situations such as the presence of severe facial injuries.

Lesson 7. Fractures and Splinting — Improvisation is stressed. Particular attention is paid to follow-up care since professional assistance may not be available for a considerable time after injury.

Lesson 8. Transportation of the Injured—Stresses the best method of moving injured persons, and includes precautionary measures for reducing the possibility of further injury.

Lesson 9. Burns—Teaches the care and treatment of burns over a period of 2 weeks in the absence of professional care. Stresses improvisation.

Lesson 10. Nursing Care of the Sick and Injured—Care of general illness and the care of injuries after emergency treatment has been administered. No attempt is made to teach diagnosis. Instead, treatment of symptoms is emphasized. The lesson recommends that people suffering from chronic illnesses and requiring special medication carry on hand ample stocks for use in an emergency. No specific medication is recommended in the treatment of injury or illness other than those commonly used every day, such as aspirin.

Lesson 11. Infant and Child Care—The care of infants and children in a normal situation is difficult enough when necessary items are readily available. Confinement and lack of usual conveniences will add to the difficulty. Improvised, yet it is believed effective, methods of caring for infants and children in a disaster situation are discussed.

Lesson 12. Emergency Childbirth—Responsibility for assisting at childbirth in an emergency situation may rest with lay people. Because of the physical and psychological effects of disaster, particularly following a nuclear attack, many births, some of them premature, must be anticipated. This lesson demonstrates the fundamental techniques that a lay person should observe in assisting at a normal delivery.

Purposes

What are the goals of such a compact and comprehensive program? The goals are ambitious but desperately important:

1962—Early in this year we hope each State has instituted local training sessions. The Public Health Service intends to maintain a close liaison with the States in order to benefit by their evaluation of the professional content of the kit as well as the methods of instruction. A constant process of revision of content will be instituted as local experience dictates.

By the end of the year it is hoped the States will have trained at least one member in each of the 300,000 families.

1963—By this year most of the early problems of instruction and professional content will have been smoothed out. We hope to accelerate kit production and use to the extent that an additional 3,000,000 families will have had at least one member trained in medical self-help.

1964—It is the ultimate goal that each adult member of our society is trained in the fundamentals of survival under disaster conditions. By the time this is accomplished many additional avenues of approach will have been investigated including perhaps instruction through the mass media and the secondary schools. In addition revision and upgrading of instructional material may require refresher courses as well as advanced courses for selected people.

Summary

The disparity between need for medical care and the medical resources available to serve these needs, aggravated by problems of prolonged shelter living required by an all-out national disaster dictates the institution of an ambitious program of medical self-help training.

Through such a program of instruction in basic disaster-oriented health care we may expect to produce a strong deterrent to attack upon this country. In the event of a national disaster, this knowledge may be vital to the survival and recovery of our free nation.

If the program is to succeed, medical self-help training must be applied in an organized manner under the direction of the state and local civil defense agencies and the professional direction of the State and local medical societies and the individual practicing physician.

Support is being sought from all interested organizations in endorsing this program through:

1. Assumption of a voluntary role in local training programs.

2. Provision of assistance in the review and modification of the training kit's technical content and its teaching methodology.

3. Promotion through the public affairs programs of organizations.

In conclusion, one can readily see there is a basic need in our nation for the application of a training program in Medical Self-Help as an important integral adjunct to the overall civil defense efforts of the United States.

Medical Self-Help Training is a program that can work, it has been conceived with a foresight that is a credit to all concerned. It has been developed after adequate preparation, study, consultation and the closest of cooperation between all involved.

Now is the time for leadership and for maximum cooperation to make this needed arm of civil defense a working reality. A great leadership responsibility falls in the hands of the medical profession. I cannot but think that we will rise to the challenge.

I cannot help but think that you as a leader in your field will work and cooperate to accomplish this need of our nation. We really have no choice, the question is simply a matter of survival of our nation itself. The answer then as to whether or not our nation's civil defense efforts succeed rests in your hands, whether it will succeed or not depends upon you, your energies and your dedication. I don't believe you will fail America. I hope not.

The Journal of the Louisiana State Medical Society

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Editorial

Pinworms (Enterobius Vermicularis): Their Wide Distribution and Important Clinical Significance

The pinworm or *Enterobius vermicularis* is the most common helminth infestation in the United States. It is one of the most prevalent in the world. An estimated 209 million persons carry this parasite. It is considered to be more common in colder climates than in the tropics. It has been reported in 52 per cent of adults and 60 per cent of children in Toronto, 29 per cent of boys and 34 per cent of girls in San Francisco, 16 per cent of negro children and 40 per cent of White children in Washington, 21 per cent of Orientals and 40 per cent of Caucasians in Honolulu, only 1 per cent on the isle of Guam and 100 per cent of children in Amsterdam. Its spread and perpetuation seem to be favored by cold moist climate. The eggs become non-viable in hot dry atmosphere.

The normal habitat of the adult worm is the colon. It has a simple direct life cycle. The distention of the body of the gravid female worm supposedly loosens the hold on the intestinal mucosa of man, the host. It then migrates out of the anus and eggs are deposited on the perianal and perineal skin. The eggs become infective within four to six hours and when transported to the mouth and swallowed a new cycle is established. Infection is from man to man and any mechanism by which the eggs may get from the place of deposit back to the mouth will perpetuate the infection. This includes airborne infection and is responsible for infestation being family-wide in most cases. There is said to be no convincing evidence that it is less prevalent in the higher economic and social groups than in the lower. It is reported as being present in 30 per cent of the surgically removed appendices in New Orleans.

One female worm may deposit as many as 11,000 ova which average 55 by 26 microns. The worm is about ¼ inch long and has a diameter of a fine thread. The worms may burrow into the mucosa of the cecum. The life cycle is about two months. The deposition of the eggs in the perianal area is attended by intense itching and subsequent irritation of the skin accompanying which an inflammatory papular rash has been described. The symptomatology may be quite out of proportion to the anatomical lesions. The worms may migrate into the vagina and uterus. Twenty cases of invasion of the female pelvis by the worms have been reported. In some there has been extensive granulomatous pathology.

Litter,[1] as a result of a ten year study, considers that as a result of pinworm infestation clinical manifestations of disease may appear in nearly all of the major organ systems. This includes such conditions as asthma, generalized urticaria, papular dermatitis, ulcerative enterocolitis, epistaxis, purpura, epilepsy, chorea, retinal hemorrhage, transient blindness, toxic synovitis, neurasthenia, intestinal pseudo-occlusion and hematuria. He reports instances of children with symptoms suggesting organic brain disease where electroencephalograms seem to corroborate the presence of an organic lesion. Symptoms were controlled by treating the pinworm infestation and the electroencephalogram frequently returned to normal.

He reports a three-year-old-child suffering with half-hour bouts of amblyopia several times daily together with other troublesome eye symptoms. Following the treatment of pinworm infestation with piperazine the symptoms disappeared. There were also observations on many children with behavior problems and emotional difficulties. After pinworm infestation was removed the psychic problems were no longer present. In some asthmatic patients the control of the pinworm infestation was followed by an abrupt cessation of the asthmatic attacks.

This author quotes one urologist who found that 50 per cent of the cases of hematuria in young girls were due to pinworm infestation and advised omitting unnecessary urological procedures if hematuria disappeared following irradication of the pinworms. It was suggested by Litter that, in two cases of Henochs-Schonlein purpura which were apparently triggered by the presence of hordes of pinworms, there may be a similarity between parasitic-induced bleeding in these two patients and the hemorrhagic tendency induced by the bite of leeches and venomous snakes.

Litter considers that pinworm infestation is a factor in the cause of colic in infancy and also states that parasitic infestation should be looked for in children in whom a toxic synovitis or a limp does not respond to the usual orthopedic treatment.

Among the more unusual symptoms in children, which pinworms are suspected as influencing, are pica and trichotillomania (an uncontrollable impulse to pluck out one's hair). Another manifestation is the formation of small showers of fine papules in the perinasal and peri-oral areas accompanied by pruritus. These are considered to be the result of the migrations of the parasite up the gastrointestinal tract and the deposition of ova outside the nasopharynx. Following scratching impetiginous lesions develop.

The diagnosis of enterobiasis is dependent on finding the live worm or identifying the ova. The worm may be found in the stool or in the perianal area. It is of no avail to attempt to find the ova in the stool. The female pinworm requires free oxygen for egg laying and this becomes available only after migration into the perianal area. The recommended method for identification of the ova is application of the sticky side of Scotch tape to the perianal area at the time of itching which is about midnight and about 6:00 a.m. The Scotch tape is then applied sticky side down to a slide and the ova searched for under the microscope.

The pinworm is a difficult parasite to irradicate. Treatment may remove the worms from the bowel but the danger of

reinfestation from eggs already deposited on the skin, in clothes, on household objects, in rugs or in the air is ever present. Since the prevalence of the parasite in other members of the family is the rule all have to be treated at one time and accompanying this effort it is necessary to institute a decontamination ritual. The treatment of choice is piperazine citrate available as "Antepar®".[2] The dose is 25 to 50 mgs. kilo up to a maximum dose of 2 grams a day given as a single daily dose for six days. After a week without treatment this is repeated. The side-effects of this drug are regarded as trivial and knowledge of the remote symptoms connected with enterobiasis gives a clinician another approach toward the solution of bizarre syndromes.

[1] Litter, Leo: Pinworm a Ten Year Study, Arch. Pediat. 78:440 (November) 1961.

[2] Burroughs Wellcome and Company.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

OF HOGS AND HUMANS

In medicine, a bad treatment is almost certain to follow a mistaken diagnosis. Unrealistic, harmful laws are likewise apt to follow inaccurate statements about the conditions which these laws are supposed to correct.

This may well happen with pending legislation to control the prescription drug industry. It is a complicated, technical industry and even highly placed government spokesmen get the facts about it twisted a bit.

Not long ago, Secretary of Health, Education, and Welfare Ribicoff remarked that men, women and children should receive the same protection against the marketing of worthless drugs as do hogs, sheep and cattle. This made headlines in many papers, was repeated in a Presidential message to Congress, and undoubtedly created a strong public impression. The consumer could easily conclude that animals are protected by law against bad drugs and that human beings are not. But the facts are otherwise.

Medicines for animals and human beings alike are regulated by two sets of laws, one covering biological products such as serums and vaccines, the other covering nonbiological medications usually dispensed in the form of tablets or capsules.

It is true that for animals the Virus, Serum, Toxin and Analogous Products Act of 1913 prohibits the sale of "worthless" products, and that the specific word "worthless" is not used in the corresponding legislation relating to medicines for man. It is equally true, however, that the Act relating to human biologicals, the Virus, Serum, and Toxin Act of 1944, affords human beings every bit as strong protection. In this Act, the Public Health Service is given authority to insure "the continued safety, purity and potency of biological medicines." Moreover, the product must "effect a given result." It cannot, in other words, be worthless.

With respect to other medicines, both animals and humans are protected by **exactly the same law**—the Food, Drug, and Cosmetic Act of 1938.

Obviously, then, hogs do not receive greater protection than humans. This is the fact of the matter, and when the fact pertains to such a vital question as the public health, it is important to keep the record straight.

GROUP HEALTH INSURANCE

Seven out of every ten employees covered under group health insurance policies issued by insurance companies during 1961 have the right to retain their protection when they retire, the Health Insurance Institute reported today.

The Institute said its findings showed that there was a continuing trend in group health insurance policies toward coverages which employees can carry into their retirement years.

The Institute report was based on its second annual analysis of data supplied by insurance companies which were responsible for 74 per cent of the total group health insurance premiums in the United States in 1960. The data sampling consisted of some 2,300 new group

coverages issued last year protecting 295,474 employees, declared the Institute.

The retention of the worker's health insurance coverage after retirement is achieved in two ways: by converting his group benefits to an individual policy upon retiring or by continuing the benefits on a group basis.

Of the employees protected by new group coverages last year, some 187,331, or 63.4 per cent of the total, have the right to convert to an individual policy upon retirement, said the Institute. An additional 50,646 employees, or 17.1 per cent of the total, have the right to continue their medical care benefits on a group basis when they retire. Some have a choice of either. Eliminating this duplication factor, a total of 68.4 per cent of the employees can retain their coverage when they retire, said the Institute.

A small but continuing trend in this type of retirement provision is shown by comparing this data with findings of past years. In 1960 the Institute data sampling consisted of some 2,100 new group medical care coverages protecting 276,886 employees. A total of 67.6 per cent of these employees had the right, upon retirement, of either converting to an individual health insurance policy or of continuing benefits on a group basis, said the HII.

In addition, a 1959 study of group hospital expense plans disclosed that 55 per cent of employees and dependents had the right either to continue or convert their health coverage upon retirement. And a 1956 study by the New York State Department of Insurance showed some 45 per cent of those covered by group insurance at that time had the right to retain their health coverage when retiring.

SELECTIVE SERVICE DEFERMENT OF RESIDENTS AND INTERNS

Recent discussions with the National Advisory Committee on the Selection of Physicians, Dentists and Allied Specialists have clarified several issues arising from the recently accelerated program of drafting interns and residents into military service. There is no basic change or new administrative regulation concerning the method of drafting physicians. Selective Service officials, although aware of the educational value of hospital residency programs, are finding it necessary to use the draft mechanism to bring into the armed services the number of physicians now needed.

Defense Department as well as Selective Service officials advise that if each draft-age doctor keeps his local Selective Service board informed of his residency status, and if each hospital administrator keeps fully informed of the military classification of his house officers, the draft problem can be greatly alleviated. Selective Service officials plan to publish specific bulletins to provide doctors and hospitals with all necessary current information about the accelerated draft.

Meanwhile, there are a number of steps which both residency candidates and hospitals could and should take to avoid unnecessary disruption of training programs:

1. Prospective residents will be automatically classified 1-A upon completion of internship. It is essential that the prospective resident notify the proper Area Board about his appointment. The proper Area Board is that which has jurisdiction over the locale of the hospital to which he is appointed. Selective Service officials emphasize that such notification of the Area Board in no way will reflect on the resident's status with his own local board. If the prospective resident waits until he receives a 1-A classification notice from his local draft board, he has only ten days in which to make an appeal, Failure to appeal within the ten-day period will nullify his right to appeal.

2. Hospitals should ask all candidates for residency positions to furnish their Selective Service numbers, their draft classifications, and the addresses of their local boards. Selective Service officials recommend that the hospital notify the respective local boards of the effective dates of each resident's appointment. This notification is not an appeal, but it informs local boards of facts which may help in making a judgment on a draft candidate's change of status. An appeal from a draft status should be directed to the Area Board. The appointing hospital may, of course, support the prospective resident's appeal by letters to the Area Board.

3. Because the present national emergency is likely to be of extended duration, Selective Service officials urge hospitals to consider carefully the draft status of each prespective resident. It is recommended that, to the extent feasible, a hospital appoint draft-exempt candidates in sufficient proportion so that continuity of its residency program may be maintained.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

CLINICAL SYMPOSIUM THE UNIVERSITY OF TEXAS POSTGRADUATE SCHOOL OF MEDICINE

The University of Texas Postgraduate School of Medicine is pleased to announce a clinical symposium on "The Practical Treatment of Hypertension," scheduled for Thursday, Friday and Saturday, September 20, 21 and 22, 1962. The symposium will be held in the Auditorium of The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston, Texas.

The program will include a number of outstanding guest speakers who will discuss hypertension as follows: Theories and concepts regarding etiology, metabolic observations, hemodynamics, natural history, indications for treatment, various therapeutic agents and surgical procedures. Emphasis will be placed on the medical-surgical treatment of essential hypertension and curable forms of secondary hypertension. There will be no tuition fee.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 102 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

COURSE IN POSTGRADUATE GASTROENTEROLOGY

The Annual Course in Postgraduate Gastroenterology of the American College of Gastroenterology will be given at the Morrison Hotel in Chicago, Ill., November 1-3, 1962.

The College also announces that after a 3-year absence, the moderators for the course will again be Dr. Owen H. Wangensteen, Chairmna and Head of the Department of Surgery of the University of Minnesota School of Medicine and Dr. I Snapper, Director of Medical Education, Beth-El Hospital, Brooklyn, N. Y.

The faculty for the course will be drawn from the Medical Schools in and around Chicago. The subject matter to be covered, from the medical as well as the surgical viewpoint, will be essentially, the diagnosis and treatment of gastrointestinal diseases and comprehensive discussions of diseases of the mouth, esophagus, stomach, pancreas, spleen, liver and gallbladder, colon and rectum. A Clinical session will be held at the Cook County Hospital in addition to the several individual papers to be presented.

For further information and enrollment write to the American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

IMPROVED BIOPSY CAN DETECT PRECANCEROUS LUNG

Precancerous lung conditions can now be detected by an improved type of biopsy, it was reported in the April 21 Journal of the American Medical Association.

Drs. John J. Nolan and William F. Enos, Arlington, Va., said the sponge biopsy technique can detect in living persons changes in lung tissue related to cigarette smoking and lung cancer previously discovered in a study of autopsy material from 400 men who died of lung cancer and other causes.

The previous study by Dr. Oscar Auerbach and associated researchers produced anatomical evidence that inhalation of cigarette smoke is a factor in the causation of lung cancer, the two physicians said. This "monumental work" (reported at the 1959 AMA Clinical Meeting) showed that atypical lung tissue changes increase in direct ratio with the amount of smoke inhaled, they said.

In a series of 100 sponge biopsies, the authors said they found the same premalignant and malignant changes in the lung tissue of cigarette smokers that Auerbach demonstrated in autopsy material, i.e., groups of cells proven to be forerunners of, or actually associated with, invasive lung cancer.

On the basis of this finding, the authors recommended that the "habitual user of cigarettes who manifests a change in cough habit"—even with

a negative chest x-ray—undergo a lung examination including a sponge biopsy.

If atypical changes in the lung tissue are found, they said, the smoker should be warned of the increased risk of developing invasive lung cancer if he persists in his addiction.

Cancer of the lung now causes more deaths than any other form of cancer in men, and its incidence is increasing in men and women, the authors said. Cigarette smoking will not disappear from the American scene, they said, and early diagnosis, therefore, offers the only logical solution to this increasing problem.

Sponge biopsy has been used in the past to diagnose cancer of the skin, mouth, cervix and stomach, they said. In the respiratory tract, they said, the suspicious area is rubbed vigorously with a cellulose sponge. Tissue particles are trapped by the sponge, removed and examined microscopically, they said. The diagnostic results are as accurate as those derived from punch biopsies, they said.

This method can eliminate the necessity of a punch biopsy and the risks associated with the use of a sharp punch instrument, the authors said. In addition, they said, the sponge is inserted by means of a flexible carrier and can reach areas which the inflexible punch instrument cannot.

HEALTH AND SAFETY TIPS FROM THE AMERICAN MEDICAL ASSOCIATION

Do you have trouble sleeping at night? Tired and weary, but just can't get to sleep? Toss and turn for hours? If so, you have a lot of company. Insomnia plagues millions of Americans. Almost everyone encounters a sleepless night now and then.

There is no sure cure for insomnia. There are all sorts of pet remedies. If you have one that works, use it. Charles Dickens could sleep only in a bed that faced north. Face your bed north, or any other direction, if it helps you get to sleep.

Today's Health, the magazine of the American Medical Association, offers a few suggestions that might help you get to sleep—

—Make yourself as comfortable as possible before you retire. Make sure you've the right temperature in your bedroom. Wear comfortable pajamas or sleep in the altogether if you prefer.

—Use a comfortable mattress, not too hard or too soft; good bedsprings that won't pop coils into your ribs and won't sag in the middle; fitted sheets that are harder to wrinkle; fluffy, light blankets rather than heavy ones.

—Take a brief, relaxing walk before turning in. Or some mild exercise to help tire you enough to relax.

—There are all sorts of theories. Some people say coffee keeps them awake. Some prefer warm milk or a light snack. Many people read themselves to sleep, using everything from comic books and mystery magazines to rhythmical poetry.

If you encounter a sleepless night now and then, don't fight it. Just lie there and relax. The rest will do you good. Unless your insomnia is deepset, the chances are that you will get enough sleep after you finally drop off.

If insomnia becomes a real health problem, see your doctor. Sleeping pills, or sedatives, may be prescribed to provide temporary relief from insomnia until the underlying cause is removed. Insomnia is a symptom of emotional stress or over stimulation from some other cause.

WEST VIRGINIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

Dr. Alfred E. Maumenee, Professor of Ophthalmology at Johns Hopkins University School of Medicine, Baltimore, Md., will be one of the guest speakers at the 95th Annual Meeting of the West Virginia State Medical Association at the Greenbriar Hotel, White Sulphur Springs, West Virginia, August 23-25.

He will also speak before a session of the West Virginia Academy of Ophthalmology and Otolaryngology at their summer session on Friday afternoon August 24th.

For further information contact Mr. William Lively, Executive Secretary, West Virginia State Medical Association, Box 1031, Charleston 24, West Virginia.

HEART RATE DURING SLEEP STUDIED BY FM SYSTEM

An FM radio system has enabled researchers to study heart rate patterns of patients during a night of undisturbed, uninterrupted sleep, it was reported in the June 16 Journal of the American Medical Association.

The success of the study indicates that the technique, known as radiotelemetry, will make it possible to gather information on bodily functions which were previously difficult to observe, Drs. Gordon H. Ira Jr. and Morton D. Bogdonoff, Durham, N. C., said.

"Though the situation of uninterrupted sleep does not present many technical difficulties, the fact that the observations were made without in any way disturbing the subject suggests that the method will have wide application," they said.

The study revealed that the heart rate of a sleeper decreases gradually during the course of the night and eventually reaches a low point after which it may increase gradually, the researchers reported.

However, they said, the heart rate of persons with hyperthyroidism did not decline during sleep. Pulse rates in these persons ranged from 108 to 118 beats per minute, which were not

appreciably lower than their pulse rates while awake, they said.

The study also revealed that there were some periods of increased heart rate during the night which were associated with body movements.

"Simultaneously recorded electroencephalograms [records of brain activity] demonstrated that the depth of sleep lightened at the time that body movement and heart rate increases occurred," they said. "The plane of sleep, therefore, is fairly consistently reflected by the contour of the heart-rate pattern: when there is variability in heart rate, the plane of sleep is light; when there is constancy in heart rate level, the plane of sleep is deep."

Prolonged and uninterrupted recordings of this type have been difficult to obtain because of limits imposed by recording equipment, the two physicians said. Advances in electronic miniaturization have led to the development of transistorized radio instruments which make it possible to signal information without bulky recording equipment, they said.

A transmitter, the size of a package of cigarettes, is used in the new technique, the authors explained. The patient's heart beat is picked up by leads attached to his chest which are connected to the transmitter worn in a wide belt, they said.

The transmitter, operating on a frequency allocated by the Federal Communications Commission, broadcasts an FM signal which is received on a standard FM radio, they said. From the receiver, the signal is fed into a tape recorder and then to other machines for analyzing the data, they said.

The authors are affiliated with the department of medicine Duke University Medical Center.

PSYCHIC FACTORS FOUND IN BLEEDING DISORDER

Emotional problems appear to be related to chronic purpura, a bleeding disorder, in much the same way that psychological factors have been linked to bleeding stigmata, according to Drs. David P. Agle and Oscar D. Ratnoff, Cleveland.

A study of nine women with purpura, a condition in which blood spreads abnormally into the skin and creates purple areas, revealed that all had previously experienced hysterical symptoms, the two physicians wrote in the June Archives of Internal Medicine, published by the American Medical Association.

The emotional background of these patients "displays similarities to that previously described in some individuals with bleeding stigmata," they said.

Perhaps the most extensively studied stigmatized individual of this century has been Theresa Neumann of Konnersreuth, the authors pointed out. Prior to the first appearance of the stigmata, reproducing the wounds of Christ, Miss Neumann had alternating episodes of blindness, deafness, convulsions, bleeding, and paralysis, they said.

Similar episodes have been described in Mohammedans in whom bleeding simulated the battle wounds of their prophet have appeared during times of deep contemplation, they said. A number of case reports describe bleeding episodes unrelated to religious experience in patients with various emotional problems they said.

Their own study suggests that "purpuric bouts" occur at times of emotional stress, the two researchers said. Among stresses reported in the nine patients were fear, resentment, anxiousness, despair, and anger directed outwardly and inwardly, they said.

Eight of the group admitted that they had severe problems in their relationship to members of their family, they said. Bleeding symptoms disappeared in two patients after their husbands died, they said.

In addition to hysterical reactions, such as hallucinations, loss of speech and paralysis, they said, the patients also demonstrated masochistic traits, i.e., an actual enjoyment of hardship.

The authors said they planned further investigations of the influence of emotional factors on bleeding episodes in known organic diseases, such as hemophilia.

Dr. Agle is affiliated with University Hospitals of Cleveland. Dr. Ratnoff is professor of medicine, Western Reserve University School of Medicine.

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YOGIS ABLE TO MAKE PULSE INAPPARENT

Yogis are able to accomplish "amazing tricks with their pulse rate and blood pressure," according to Dr. Albert Salisbury Hyman, New York City.

Yogis are followers of yoga, a Hindu philosophy of mental discipline.

In a letter to the Journal of the American Medical Association, Dr. Hyman said a study he made 35 years ago showed that no pulse could be detected at the wrist of a trained Yogi who "willed the pulse to stop."

Since Yogi methods teach selective muscle contraction and relaxation, it is mechanically possible for them to stop or diminish the pulse, he said. A Yogi can constrict the main artery leading to the arm by contracting certain upper chest muscles, he said.

BOOK REVIEWS

Hypertension, Recent Advances, The Second Hahnemann Symposium on Hypertensive Disease; Edited by Albert N. Brest, M. D.—John H. Moyer, M. D., Philadelphia, Lea & Febiger, 1961, pp. 660.

Following so closely the excellent *Hypertension, First Hahnemann Symposium on Hypertensive Disease,* the present work might well be called *Great Expectations.* Although some significant new work is presented in this volume and in spite of an impressive list of participants, including such names as William S. Blakemore, Albert N. Brest, Arthur C. Corcoran, Edward D. Freis, Arthur Grollman and many other names well recognized in the field of hypertension, the work under consideration lacks much of the freshness and vitality of its predecessor. The fourteen panel discussions following significant divisions of the book do not mirror the keen interest reflected in the discussions of the *First Symposium.* There is too much general agreement for much new material to be brought to light in these discussions. Perhaps the main fault lies in the fact that in this book are 660 pages devoted too lengthily to meager new material and review of the old.

The volume is highly technical in many aspects and several of the chapters are of little interest to any except the most ardent student of hypertension. The two large sections of the book dealing exclusively with catecholamine metabolism and drugs which affect catecholamine metabolism are inordinately long and technical in aspect.

The organization of the book is good, however, and many of the tables, figures, and the few photographs presented are of very fine quality. Some of the newer aspects of drug pharmacology, treatment, newer diagnostic methods and epidemiology are presented in an excellent fashion. The book is divided into seven main parts, including the natural history of hypertension, etiological mechanisms of hypertension, atherosclerosis and hypertension, pharmacology of hypertension, catecholamine metabolism, drugs which affect catecholamine metabolism, and the therapeutic considerations.

The first part of the book presents some interesting observations on the relationship of blood pressure to age and the definition of true hypertensive disease. The second part brings to light some new material on the effect of angiotensin on electrolyte excretion, and aldosterone secretion in malignant hypertension. In the section on atherosclerosis and hypertension some of the newer diagnostic tools in renal hypertension are presented, including I^{131} renogram as a possible screening procedure. Some of the newer concepts and techniques for renal revascularization are considered.

The fourth part of the book dealing with the pharmacology of hypertension presents a good bit of new material regarding the action of the thiazide derivatives and is one of the most interesting and lucid parts of the book. In the section on catecholamine metabolism, mechanisms of action of catecholamines and some interesting theories on the possible etiological roles of catecholamines in essential hypertension are presented. Generally however this section deals in too much detail with technical aspects of the biochemistry of catecholamines and the laboratory determination of catecholamines in urine and blood.

In part IV dealing with drugs which affect catecholamine metabolism quite a bit of good material dealing with the pharmacology and therapeutic use of guanethidine is presented. Other less known and unproven drugs such as bretylium tosylate and α-methyl dopa are dealt with at

greater length than is apparently warranted.

The last section of the book dealing with therapeutic considerations in hypertensive disease is to a large extent a review of material presented in the First Symposium; however, some of the material related to newer drugs and some of the changing concepts of treatment are of interest.

In this part of the book the idea is advanced that systolic hypertension is not an innocuous disease and has comparable effects on mortality as does the more feared diastolic hypertension. Emphasized also is the fact that diuretics have become even more firmly entrenched as the basis of treatment for all essential hypertension.

The treatment of nearly every type of hypertension is reviewed in this section, including therapy for renal and adrenal types of hypertension, and two chapters dealing with hypertensive emergencies.

One chapter dealing exclusively with arteriosclerotic hypertension and its probable significance has been added to this volume and is of interest in its approach to a syndrome which varies in several ways from the classical picture of diastolic hypertension.

Surgical measures for the treatment of hypertension are reviewed and some of the newer revascularization techniques briefly described.

More proof is presented in this section of the obvious benefits of reduction of blood pressure in hypertensive disease regardless of cause. Effective control of basal blood pressure is shown to reduce mortality and morbidity and halt the progression of disease.

In summary, although *The Second Hahnemann Symposium on Hypertensive Disease* does present some significant new material and a good review of some of the older material with regard to hypertension, the volume in general is often repetitive, at times too highly technical and frequently describes in too much detail material which adds little to general concepts of hypertensive disease.

With great persistence the reader can glean several new and useful concepts about hypertensive disease from this volume; however, the constant attention of the reader is demanded to avoid overlooking them.

ROBERT BERNHARD, JR., M. D.

Scientific Exhibits; by Thomas G. Hull and Tom Jones, C C Thomas, 1961, 126 p. $6.50.

Starting with the nature and purpose of scientific exhibits, the book proceeds through the many aspects involved in this means of visual education such as adaptability of the subject, planning, designing, costs, packing and shipping. The publication is profusely illustrated with examples of various types of displays, good and otherwise, with which the authors emphasize their comments. The bibliography lists more than 70 references.

The authors do not attempt to cover the professional aspects of the display art; not only would this be impractical but it would also bury the meat of the subject in a mass of details. Instead, they give the reader the benefit of more than 75 years of combined experience in scientific exhibits. The subject is presented in such a manner that not only can the amateur exhibitor follow the presentation easily but the professional or experienced exhibitor also should find it of interest.

Emphasis is placed upon individual taste and ingenuity in the preparation of an exhibit. Thus, while pointing out the principles and basic factors of design and production, the authors hope to lead exhibitors away from stereotyped displays. The last chapter lists the "don'ts" and should be a useful checklist for one who is preparing an exhibit.

Scientific Exhibits is recommended reading for individuals preparing such displays whether these are for national meetings or strictly local affairs. It is a storehouse of information which can insure the effectiveness of this method of presentation. The book should be in the library of all institutions where scientific exhibits are planned and executed.

ROBERT G. YAEGER, PH.D.

Symptom Diagnosis; by Wallace Mason Yater, A.B., M.D., M.S. (in Med.), F.A.C.P. and William Francis Oliver, B.S., M.D., F.A.C.P. Price $15.00, 1,035 pages. Appelton-Century-Crofts, Inc. 32 W. 32nd Street, New York, 1961.

This is the newest edition of a rather classical book that has managed to survive for the past thirty-four years the vicissitudes of modern American medical textbooks. It has survived where others have speedily perished because it deals with the unchanging fundamentals of medical practice—the symptoms and signs of disease that prompt the patient to seek medical attention.

In the preface, as in the preface to the first edition in 1927, Doctors Yater and Oliver state that the purpose of this book is "to aid the busy physician in the diagnosis of his case by allowing him to quickly reduce the number of possibilities to a relatively small list; to prevent the oversight of important considerations, and to make the medical man more observant of the characteristics of the symptoms of disease". This book, then, is an attempt to aid the physician in diagnosing disease, utilizing the results of history and physical examination as the basis from which to start.

The text is organized to present symptoms of disease in the most practical and direct way for making a diagnosis, and differential diagnosis as rapidly as possible. It is divided into several different portions. The major portion is devoted

to a listing and discussions of symptoms as related to a certain region of the body. The authors divide the body into 21 different regions such as the head, the face, the eye, the ear, etc., much as the patient would divide his body in order to describe his symptoms. Under each region is a list of symptoms referrable to that region, and the page on which a discussion of the symptoms and the diseases associated with them can be found. Another portion is devoted to a listing and discussion of general symptoms that do not arise on the basis of regional anatomy, but can result from disease of varied organ symptoms. The remainder of the text is devoted to several pages of definitions of various syndromes, and descriptions of diseases, symptoms and signs associated with men's names. Scattered throughout the entire book are 18 tables emphasizing the differential diagnosis of various diseases, such as Differential Diagnosis of Irregularities of the Heart Beat, etc.

Although symptoms and signs don't change and are always there to elicit and observe, man's recognition, re-classification, and organization of these symptoms and signs into new patterns, diseases and syndromes do change, and therefore require re-editing at periodic intervals of time to keep our diagnostic armamentarium up to date. This has been admirably done in this book with most of the recent syndromes and diseases being adequately covered. An example of this is the inclusion of unilateral renal diseases and primary aldosteronism as causes of hypertension.

It is the opinion of this reviewer, as implied by the authors, that this is a good book for the busy physician to use for quick reference to enable him to decide the next course of action in any given patient or problem. It is not designed for study or library use, but for the clinic, office, or ward, always at hand for ready information. This book can be aptly summed up by stating that it is the "PDR" (Physicians' Desk Reference) to symptoms and signs of disease.

JOHN B. BOBEAR, M. D.

The Stages of Human Development before Birth: An Introduction to Human Embryology; by E. Blechschmidt, W. B. Saunders Company, Philadelphia, 1961, 684 p. $23.00.

This text is essentially a pictorial account of human development from conception to birth. It is written by a very competent anatomist who has, for the last several decades, worked in the field of embryology.

The format of this book consists of an initial section devoted to the ovum and placentation. Primary emphasis is placed on the following section beginning with 2 mm. embryos and terminating with fetuses in the third month of development. The material in this section is organized into a series of arbitrary stages without intervening continuity. Consequently, coherence of development is lost. Herein lies a serious criticism of this volume.

The final section, devoted to body regions and organs, covers the spectrum of anatomic systems with emphasis on development of structures after the third month. The author's failure to follow either the systemic or regional approach in presentation of the material makes the sequence of events difficult to follow.

Throughout the book the illustrations are usually of good quality. They include photographs of specimens, drawings of reconstructions and photomicrographs of histologic sections. Explanatory line drawings accompany many of the illustrations. The material is arranged with illustrations appearing on the right hand pages; text on the left. The text material is run in two columns—one in English, one in German.

The main criticism of this reviewer is the grossly incomplete treatment of the subject matter. The brevity of the text material is undoubtedly determined by the atlas format. Nevertheless, this defect so pervades the book that it is rendered practically useless.

Aside from a fine collection of illustrations, this volume has little to recommend it. It has limited value as a teaching aid. As a reference tool, however, most embryologists will find it advantageous to have in their library.

M. ROBERT VAUPEL, PH.D.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

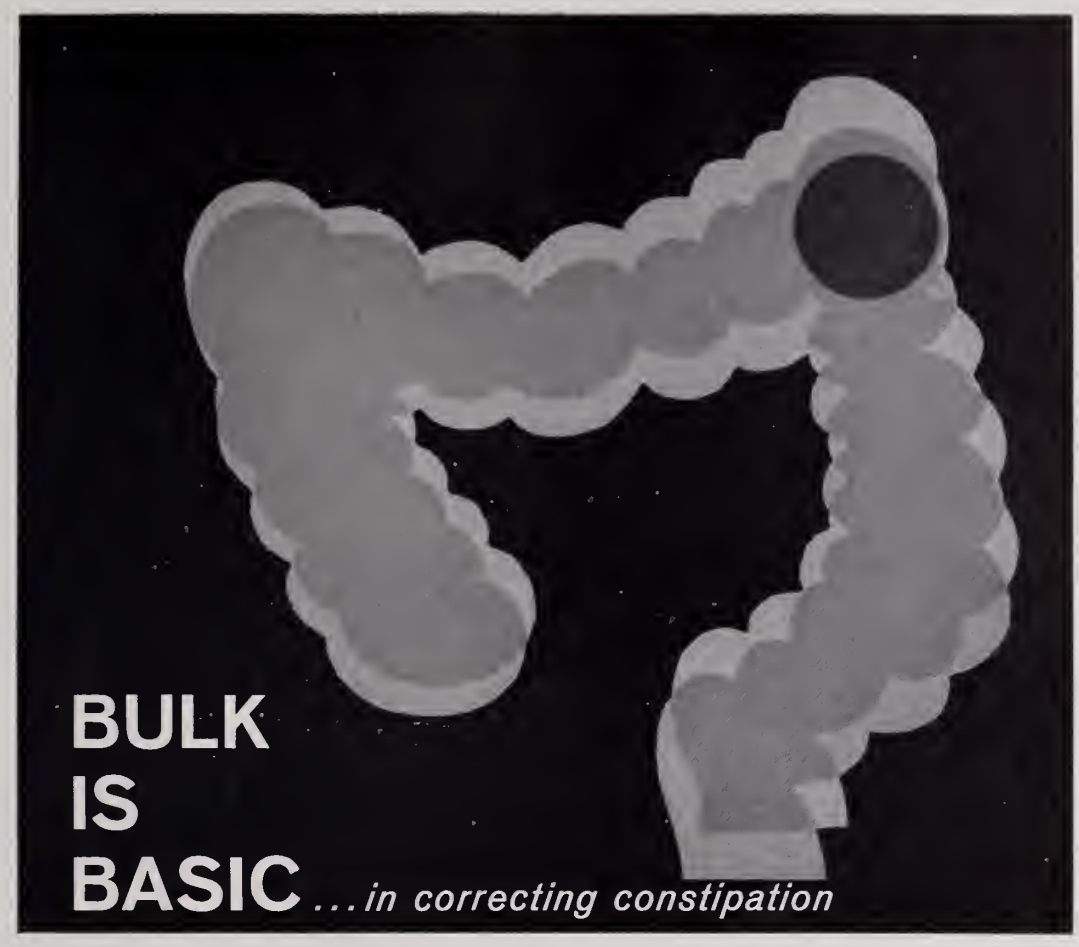
Appleton-Century-Crofts, N. Y.: Essentials of Pediatric Psychiatry, by Ruben Meyer, M. D., Morton Levitt, Ph.D., Mordecai L. Falick, M. D., and Ben O. Rubenstein, Ph.D.; Pediatrics, by L. Emmett Holt, Jr., M. D., Rustin McIntosh, M. D., and Henry L. Barnett, M. D. (13th edit.).

The C. V. Mosby Co., St. Louis: Practical Anesthesiology, by Joseph F. Artusio, Jr., M. D. and Valentino D. B. Mazzia, M. D.; Primer of Clinical Measurement of Blood Pressure, by George E. Burch, M. D. and Nicholas P. DePasquale, M. D.

W. B. Saunders Co., Phila.: Pediatric Diagnosis, by Morris Green, M. D. and Julius B. Richmond, M. D. (2nd edit.); Psychological Development in Health and Disease, by George L. Engel, M. D.; Textbook of Ophthalmology, by Francis Heed Adler, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Extracorporeal Hemodialysis Therapy in Blood Chemistry Disorders, by John E. Doyle, M. D.

Vantage Press, Inc., N. Y.: Genetics, by E. Grace White.



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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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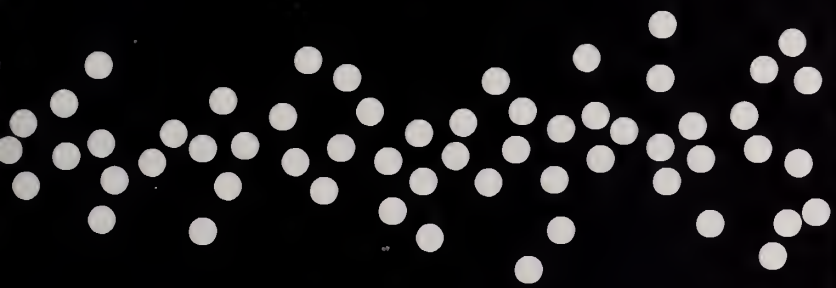
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Research in the Service of Medicine

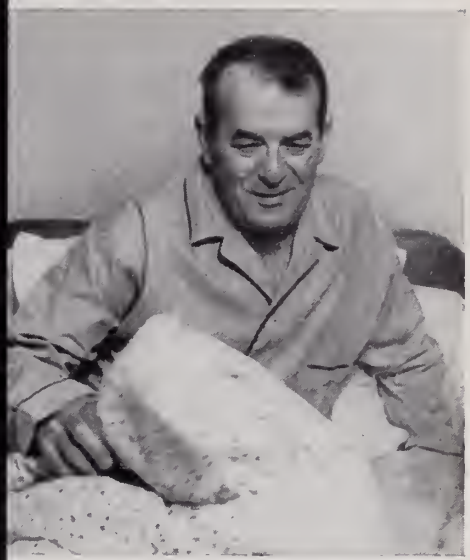


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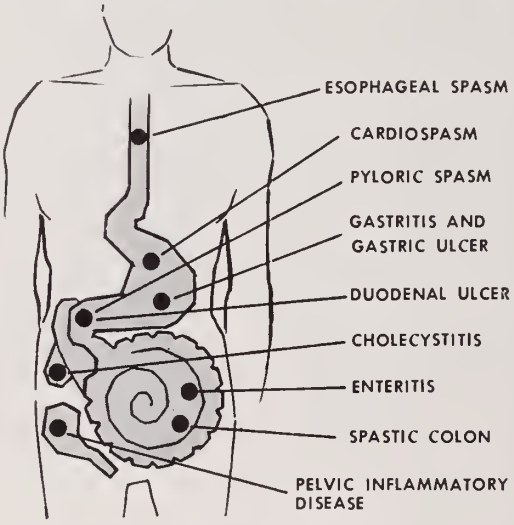
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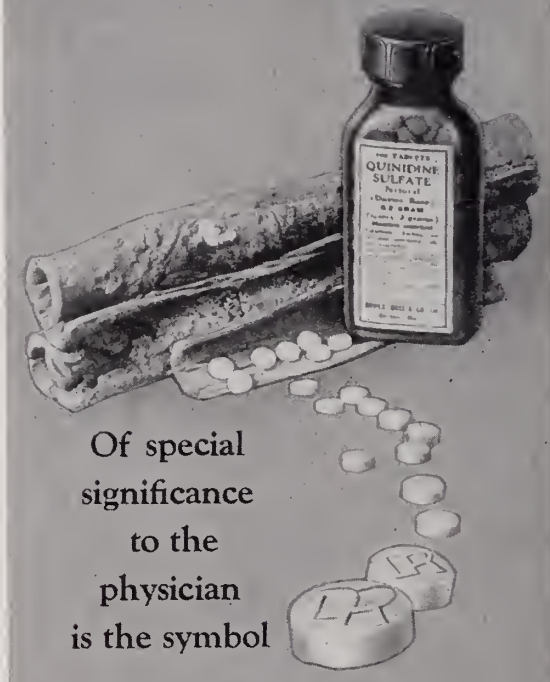
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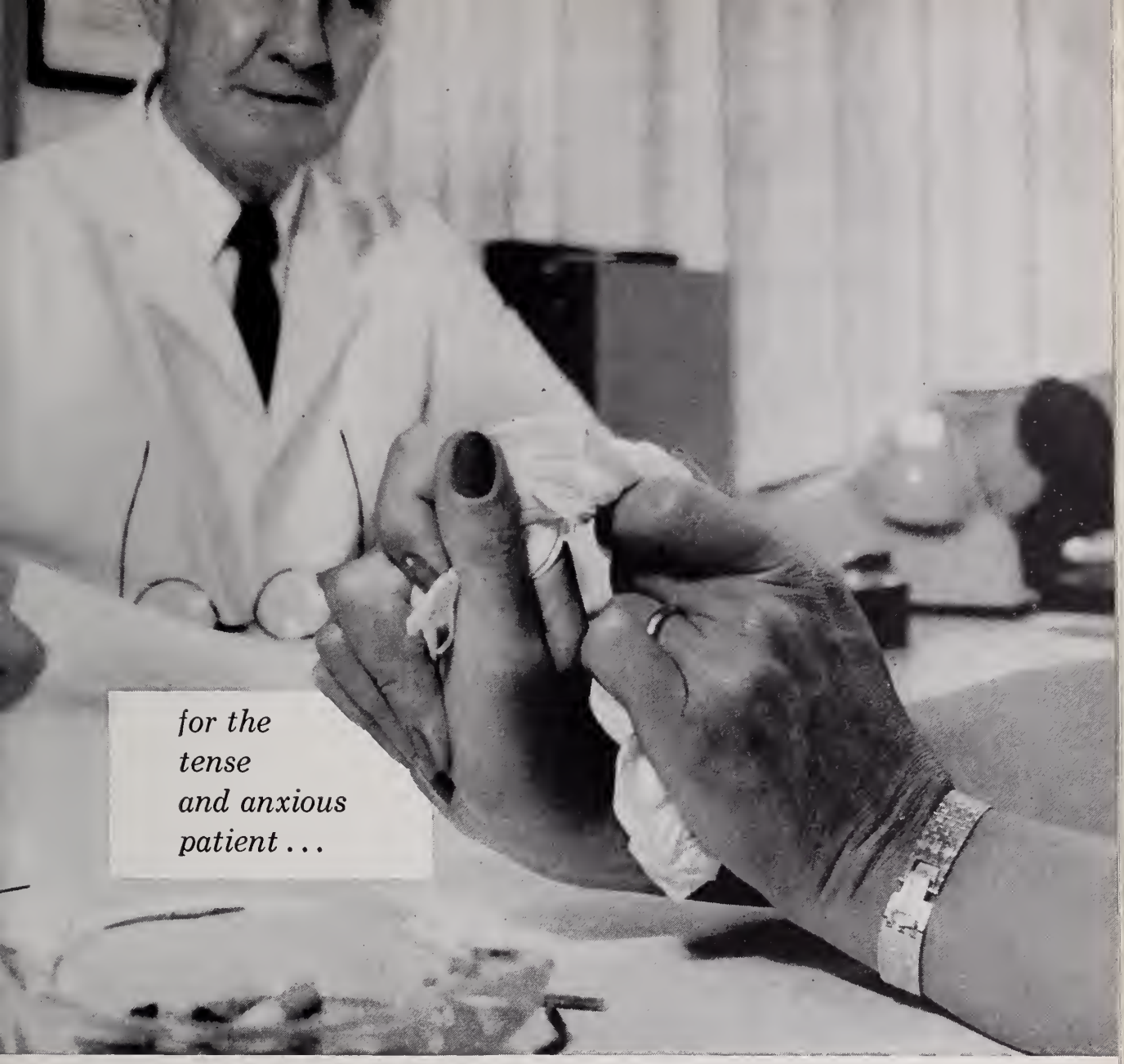
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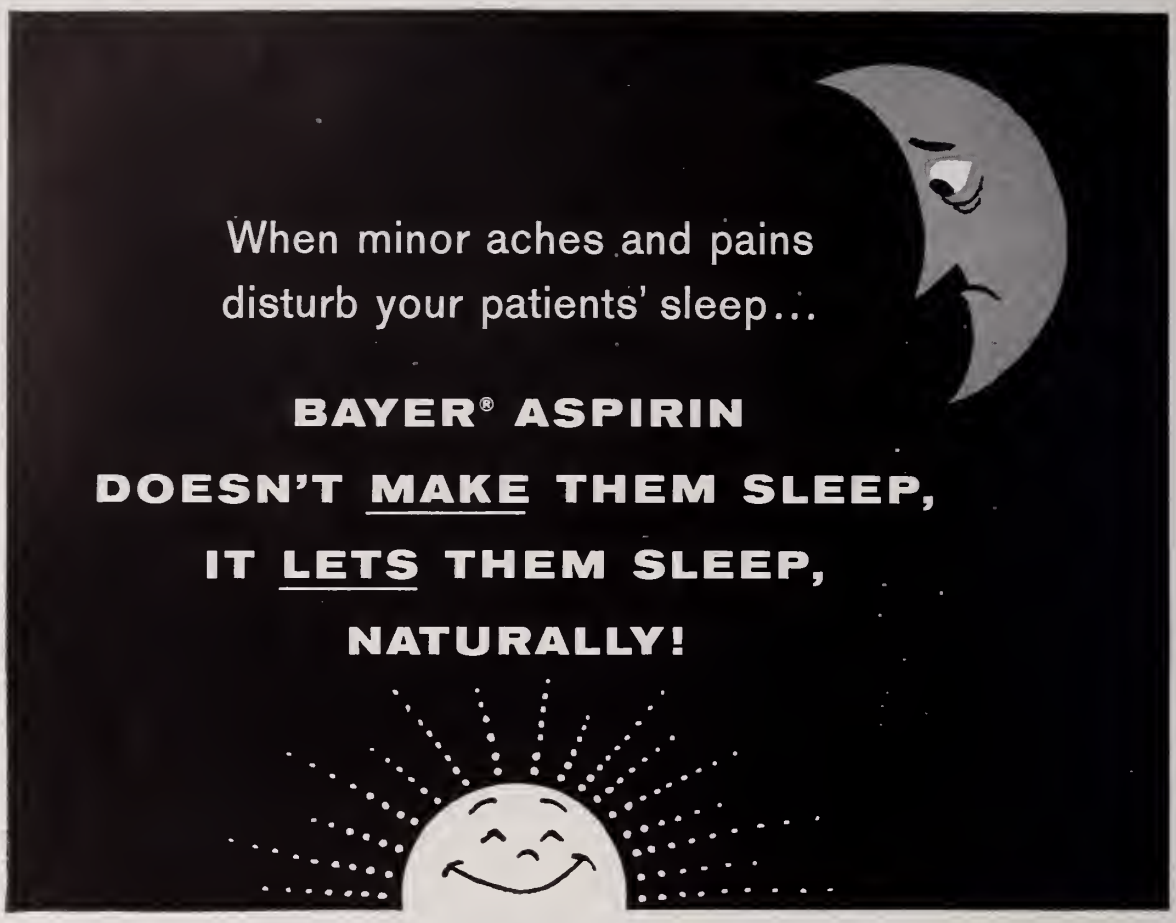
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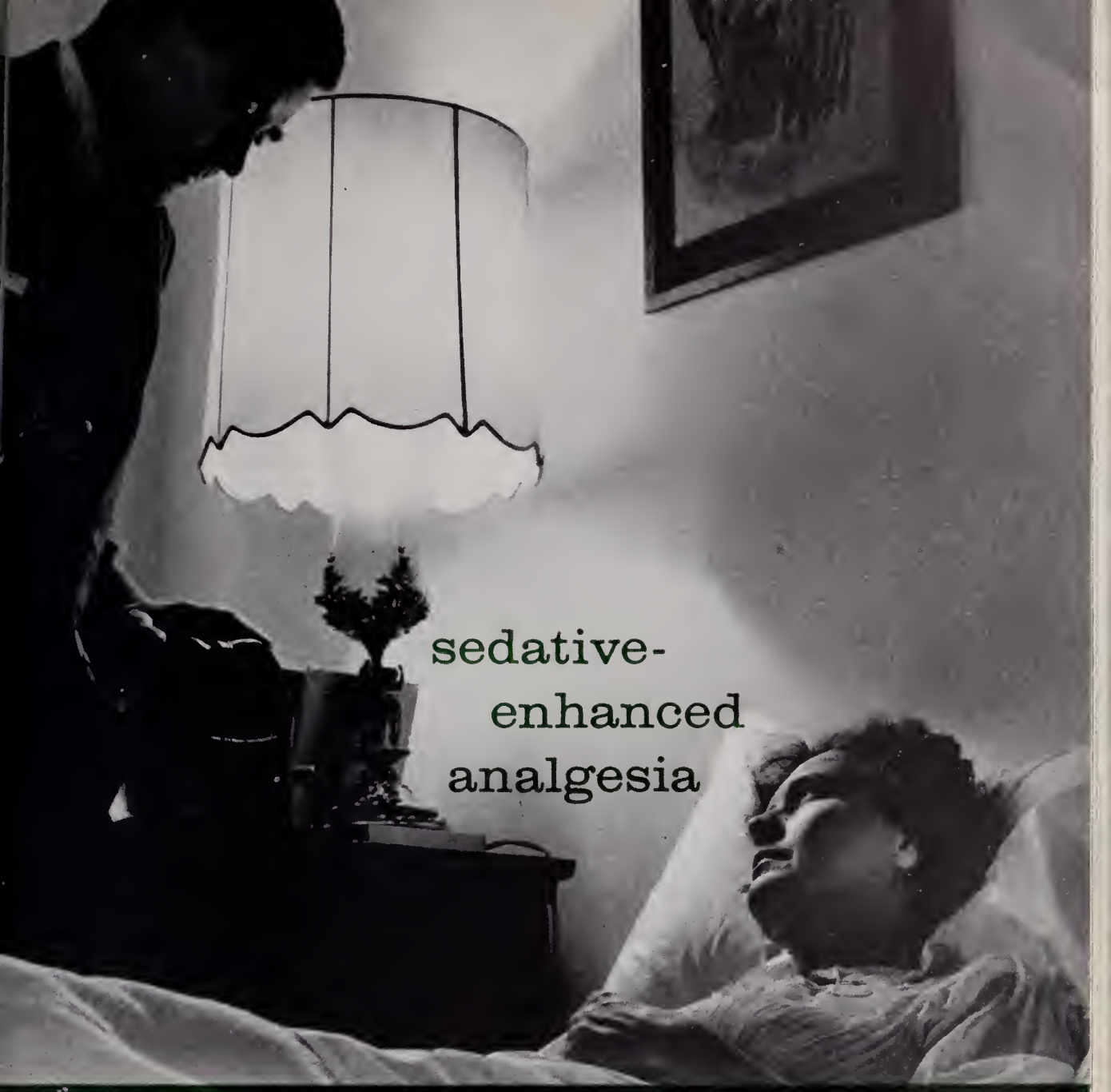
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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

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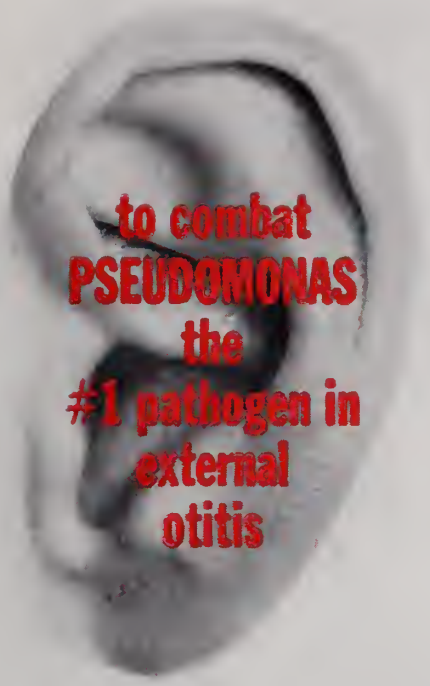
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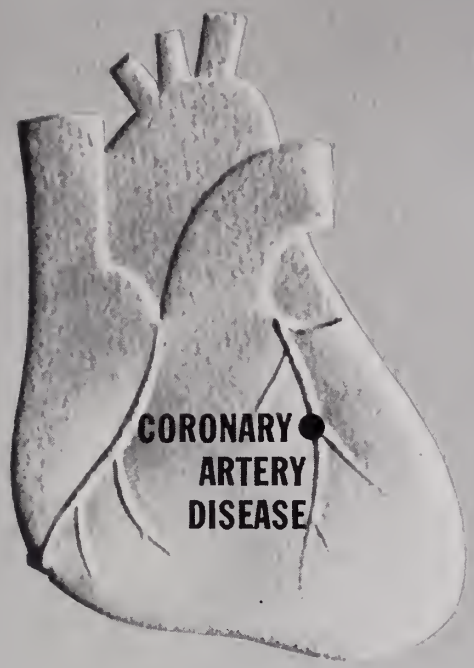
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References: (1) Root, H. F., and Bradley, R. F., in Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: The Treatment of Diabetes Mellitus, ed. 10, Philadelphia, Lea & Febiger, 1959, pp. 411, 437. (2) Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: *ibid.*, pp. 188-189. (3) Marks, H. H., *et al.:* Diabetes *9*:500, 1960. (4) Marble, A., in Summary of Conference on Diabetic Retinopathy, Survey Ophth. (Part 2) *6*:611-612, 1961.

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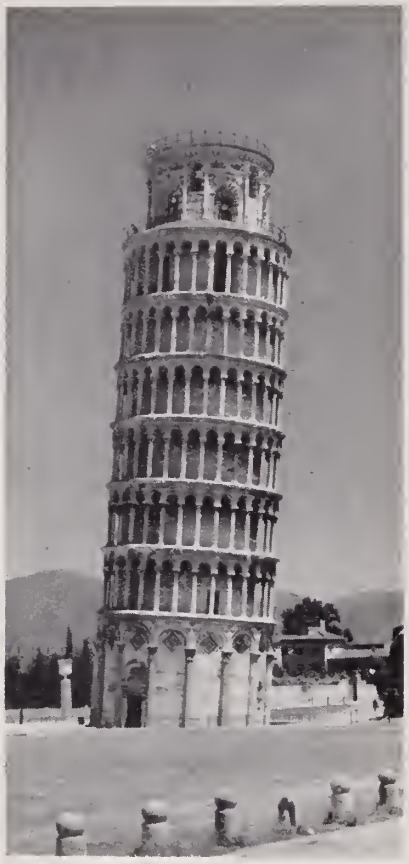
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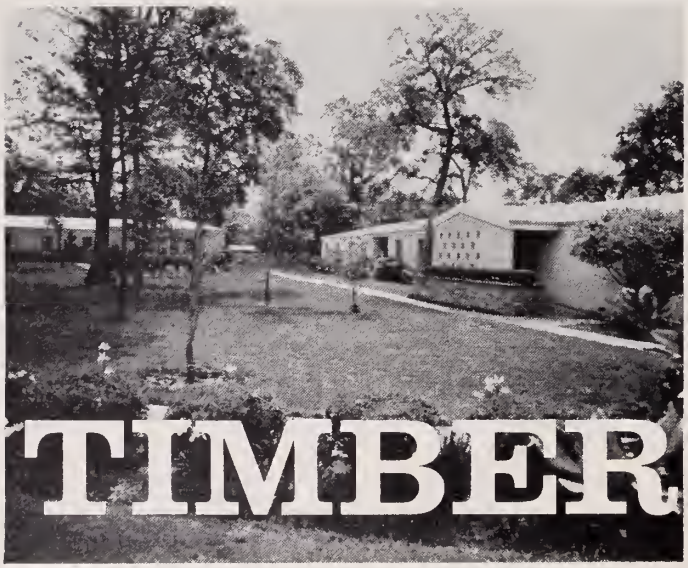
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1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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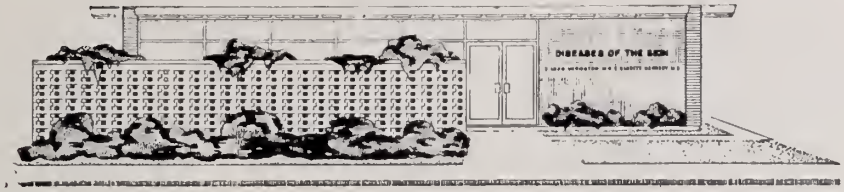
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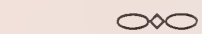
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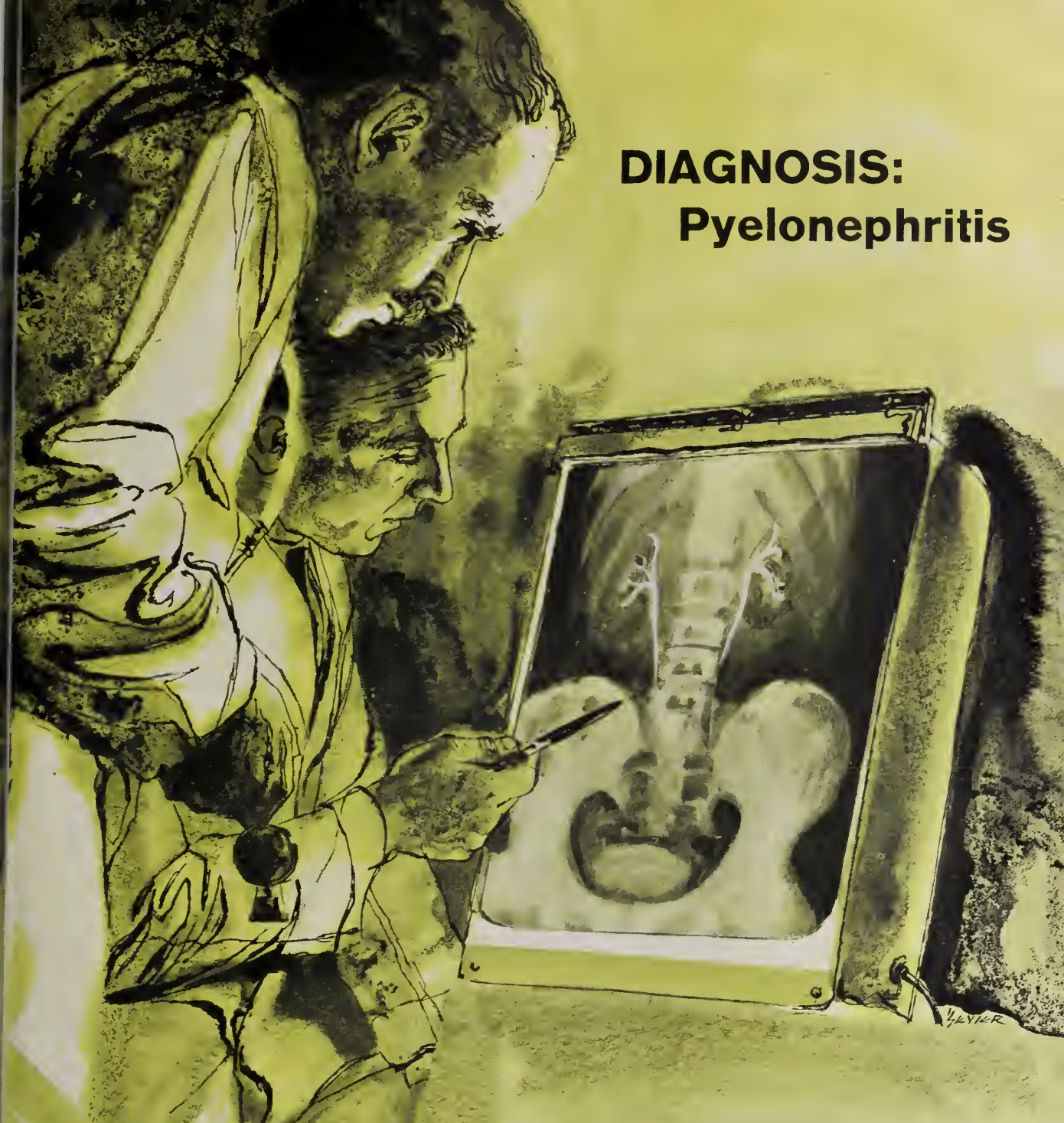
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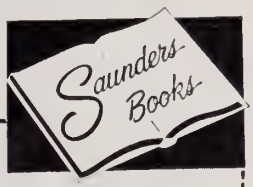
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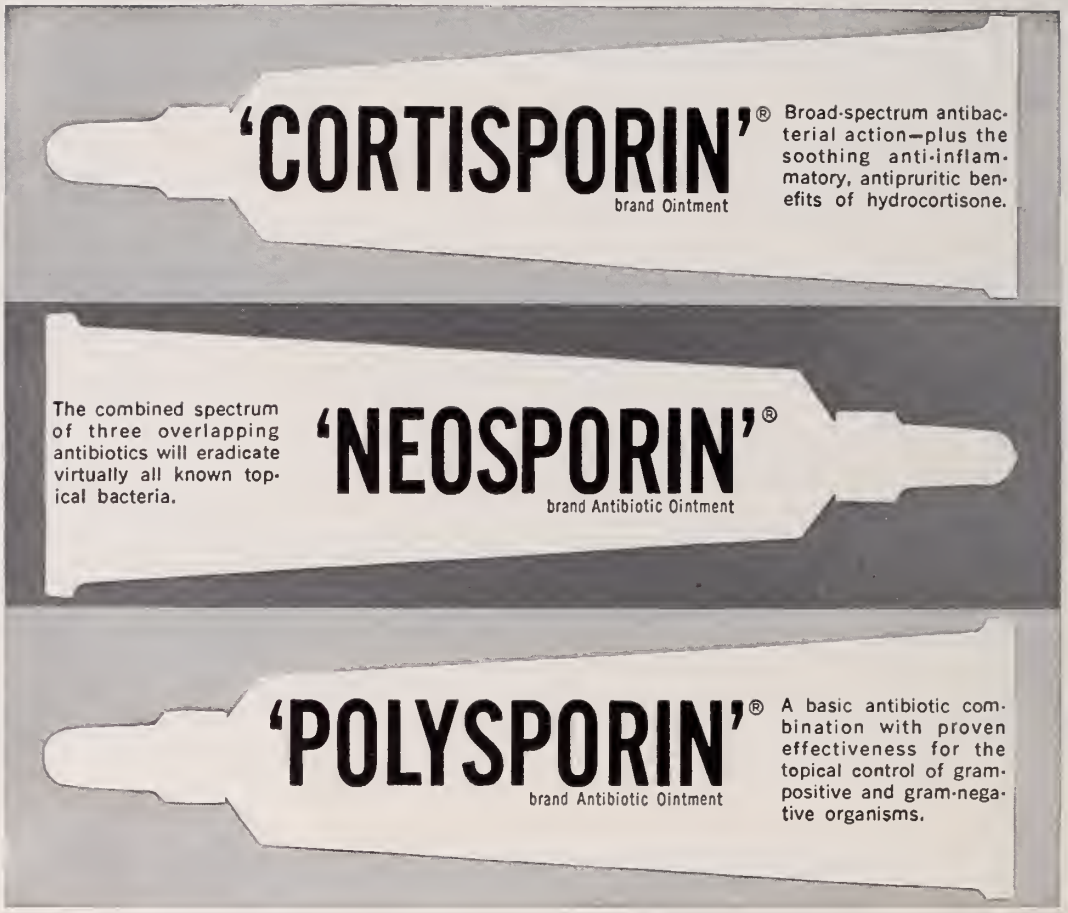


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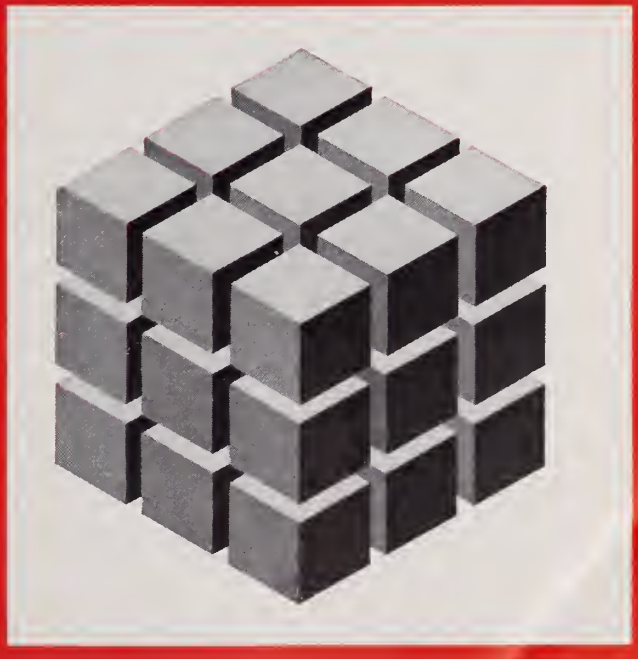
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Midline Cysts of The Nasal Dorsum*

• To the author's previously reported cases, he adds 51 cases obtained through a questionnaire to a cross section of otolaryngologists in the United States. He now reports them.

RALPH H. RIGGS, M. D.
Shreveport

MIDLINE cysts of the nasal dorsum are not common. By 1958, approximately 75 cases of midline dermoid cysts of the nasal dorsum had been reported. Other types of cysts located in this area must be extremely rare, as only a few reports of such cases have appeared in medical periodicals. After my presentation on dermoid cysts of the nasal dorsum in 1958,[1] many physicians told me that they had seen or operated on one or two patients with such cysts but had never reported their cases. It was therefore thought worthwhile to circulate a questionnaire to a representative cross section of otolaryngologists in this country concerning their experience with this lesion. Replies were received from 90 of the 150 questionnaires sent. These replies contained data on 51 previously unreported cases of midline cysts of the nasal dorsum, which form the basis of this report.

Analysis of Cases

Classification. The cases were grouped according to the classification of Macomber and Wang[2] into tumors of (1) ectodermal origin (dermoid cysts), (2) neurogenic origin (gliomas), (3) mesodermic origin (hemangiomas), and others.

To the 75 previously reported cases of midline dermoid cysts are added the 43 unreported cases collected from the questionnaires. To the 34 previously reported cases of nasal glioma (location not classified), 2 of the midline are added. To the 4 previously reported cases of hemangioma of the nasal bone is added one case of hemangioma beneath the skin in the midline of the nasal dorsum. Also included are 3 cases of organized hematoma and 2 undiagnosed cases, one of which was called a bone cyst and the other just plain cyst.

Age and Sex. Among the 51 cases collected from the questionnaires the ratio of children to adults was 6 to 1 and there were twice as many males as females.

Location. The most common location of the cyst was in the region of the junction of the upper lateral cartilages with the nasal bones extending upward beneath the frontal process of the nasal bones, and in a number of cases, into the septum. Some had a stalk at the tip of the nose with a projecting hair. Other locations were above the caudal end of the nasal bones: between the media crura (2 cases), and within the bony septum (1 case).

* Presented at the meeting of the American Rhinologic Society, Oct. 7, 1961, in Chicago.

Treatment. Of the 43 previously unreported cases of dermoid cysts of the midline, 33 were removed by external incisions; 6 were removed by a rhinoplastic approach; one was removed through the nasal septum, and 3 were operated on by a combined external incision and rhinoplastic procedure. Both gliomas were removed through external incisions. The hemangioma was operated on by the rhinoplastic approach. Two of the hematomas were approached by a rhinoplasty procedure and one through external incisions.

Discussion

Etiology. In 1942, Brunner and Harned[3] thoroughly discussed some of the embryology involved in the formation of midline dermoid cysts of the nasal dorsum. According to Gruenwald,[4] the external nose is cartilaginous at birth and forms the anterior wall of the cartilaginous capsule of the nose. Adjacent to this cartilaginous capsule, the nasal and frontal bones develop by intra-membranous ossification. Between the paired frontal bones and the nasal bones is a firm membrane, the fonticulus nasofrontalis; behind this the anterior wall of the cartilaginous capsule of the nose extends into the lamina cribrosa. Thus, space is formed by the anterior wall of the nasal capsule on the one hand and the nasofrontal fontanel on the other. This space is called the prenasal space. It contains firm connective tissue, which serves as an internal periosteum of the nasal bone and is actually a part of the dura. The prenasal space is bounded posteriorly by the cartilaginous capsule of the nose, anteriorly by the nasal bones and the nasofrontal fontanel, laterally by the frontal process of superior maxilla, and upward by the dura. In the downward direction, the space passes over into a shallow sulcus which almost extends to the tip of the nose. Therefore, on the dorsum nasi of newborns there is a strand of connective tissue originating from the dura, passing through the foramen caecum and serving as an internal periosteum of the nasal bones. In other words, there are parts of the dura in the dorsum nasi of newborns which extend to the inferior margin of nasal bones by a pedicle.

In the region of the nasal dorsum, the nasal bones develop as membranous bones between the dural connective tissue and the skin. Consequently, also in this region portions of the skin may adhere to the dura. Some believe that the dura may pull parts of the ectoderm into the depth. Nevertheless, the displaced portion of the ectoderm is always located within the prenasal space because the membranous bones of the skull develop at the end of the second or the beginning of the third month of embryonal life, a period when the cartilaginous capsule of the nose has already developed. Displacement of an ectodermal portion in the area of the nasal dorsum can occur only before development of the nasal bones. As a result, the nasal bones develop above the displaced portion of the ectoderm. Thus, the dermoid cyst must be situated behind the nasal or frontal bones, that is, in the prenasal space, provided it has any connection at all with these bones. If the displaced portion of the ectoderm retains its connection with the skin, a primary fistula of the dorsum will result. If this connection disappears, a dermoid cyst develops which, in turn, may later break through the skin, forming a secondary fistula of the dorsum of the nose.

The glioma is due to failure of normal obliteration of the dural process in the prenasal space. It may be intranasal, extranasal, or mixed, extranasal being the most common. Practically all hematomas of the nasal dorsum are traumatic.

Treatment. The most common method for removal of midline cysts is the external approach. Some surgeons use an elliptical incision and others the midline, especially if there is a stalk extending to the tip of the nose. Rhinoplastic procedures for removal of midline cysts were discussed in a previous communication.[1] In an occasional case the septum approach may be used. In recent years quite a few of these cysts have been removed by using a combined external incision and rhinoplastic procedure.

Naturally, the procedure or procedures used in the individual case will depend upon the diagnosis and pathologic alterations found. No one procedure will suffice in any one case. However, if the rhinologist will become proficient in procedures that will help prevent external scars, the results will more than justify the effort.

Summary

Fifty-one previously unreported cases of midline cysts of the nasal dorsum collected from questionnaires sent to a cross section of the otolaryngologists in this country were added to the previously reported cases of this rather uncommon cyst. These cases were classified into those of ectodermal, neurogenic and mesodermic origin, and others. The ratio of children to adults in the 51 collected cases was 6 to 1 and of males to females 2 to 1. The commonest location of the cyst was in the region of the junction of the upper lateral cartilages with the nasal bones extending upward beneath the frontal process of the nasal bone. An embryologic developmental explanation for the dermoid cysts is given. Gliomas are attributed to failure of normal obliteration of the dural process in the prenasal space. Hematomas are usually of traumatic origin. Treatment of dermoid cysts was usually by external incision, occasionally by rhinoplastic approach or through the nasal septum, or by combined external incision and rhinoplastic procedure.

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I can accept with reasonably good grace the fact that an elected representative of the people may feel it necessary to keep himself in the public eye. I recognize, too, that a Congressional Committee—and particularly the chairmanship of a choice committee—is a zealously sought and jealously guarded vantage point, one that permits almost unlimited range for personal interests as well as the representation of constituents and the business of the Congress. I cannot, however, passively accept abuse of these normal and reasonable practices. I firmly believe that the two-year investigation of the U. S. pharmaceutical industry by the Kefauver Committee, an investigation now entering its third year, involves serious abuses of our democratic process.—John T. Connor, President of Merck & Co., to Pharmaceutical Advertising Club.

Pelvic Angiography in Obstetrics and Gynecology*

• A graphic description of the uses and technic of this diagnostic aid.

JOHN L. OCHSNER, M. D.†
GEORGE T. SCHNEIDER, M. D.†
New Orleans

THE blood supply to practically every region of the human body has been radiographically visualized since the first clinical arteriography performed by Brooks[1] in 1924. Refinements in technic and development of better contrast media have resulted in improved quality of the roentgenogram and increased safety of the various angiographic procedures.

In 1931, Dos Santos,[2] discussing translumbar aortography, suggested this procedure might be of diagnostic value in cases of extra-uterine pregnancy. Coutts[3] and Hartnett[4] both encountered complications while employing translumbar aortography for specific visualization of the placenta. It was not until 1952 that Sutton[5] and Borell and associates[6] independently demonstrated the value of percutaneous retrograde femoral arteriography in the study of the female reproductive system. Since then, pelvic angiography has had a limited trial in obstetric and gynecologic practice. The reasons for this have been the high percentage of diagnostic accuracy by experimental examiners, improvements in plain roentgenologic visualization of the placenta, and lack of familiarity among obstetricians and gynecologists with angiographic technics.

Technics

The most satisfactory means of pelvic angiography has been Seldenger's percutaneous-femoral artery-retrograde-catheter technic. With the patient lying supine on the x-ray table and use of a local anesthetic, a large bore needle is inserted into the lumen of the common femoral artery. Through the needle a guide wire with a flexible tip is introduced into the artery and passed retrograde. The needle is removed and a polyethylene catheter is threaded over and advanced with the guide wire. The catheter with the guide wire is positioned in the common iliac artery 2 cm. caudad to the bifurcation of the abdominal aorta. The guide wire is removed, but the catheter is left in place. Positioning of the catheter and guide is best performed by direct radiographic visualization, preferably with an image intensifier. However, the correct position can almost uniformly be achieved blindly by measurement, knowing that the bifurcation of the aorta is 20 cm. from the inguinal ligament. Both femoral arteries are compressed by pneumatic tourniquets during injection, in order to increase the contrast density in the pelvic vessels. Twenty-five milliliters of Hypaque® is injected, either manually with force or by a mechanical pressure injector. For placental visualization, exposures are made at four seconds and fifteen seconds after completion of injection. However, for gynecologic problems in which irradiation exposure is of less significance, multiple exposures, one per second, are obtained by means of rapid cassette changes. If a lateral view appears helpful or necessary, the patient can be turned on her side for an additional film without fear of extravasation of dye or dislodgement of the catheter.

An alternative method is the retrograde injection of a bolus of dye through a 16 gauge Lindeman needle percutaneously in-

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, May 9, 1962, Monroe.

† From the Departments of Surgery and Obstetrics and Gynecology, Ochsner Clinic, New Orleans, La.

troduced into the common femoral artery. This method is simple but often does not provide visualization of the contralateral vessels and makes positional change of the patient hazardous.

Obstetrical Disorders

Knowledge of the position and morphology of the placenta in women in whom mishap during pregnancy is suspected can be reassuring of normalcy or diagnostic of abnormality. Outline of the placental sinusoids by radiopaque dye gives the examiner another adjunct in obstetrical diagnosis. In normal pregnancy, the uterine arteries become widened, straight, and displaced laterally as they course along the lateral margin of the uterus (Figure 1). The placental sinusoids are filled with dye



Figure 1. Normal pelvic angiogram, one second after injection, shows the uterine arteries extending along the lateral margins of the uterus.

from 2 to 4 seconds after injection and are seen throughout the upper half of the uterus (Figure 2). The dye is usually cleared from the uterus ten to fifteen seconds after injection.

The two most common causes of bleeding during the last half of pregnancy are placenta previa and abruptio placentae. Correct diagnosis of these conditions is imperative to insure proper treatment and safety to the patient and fetus. Visualization of placental sinusoids within the true



Figure 2. Normal placentogram, three seconds after injection, shows the sinusoids beginning to fill with dye. They have the appearance of cotton balls.

pelvis on anteroposterior projection is suggestive of placenta previa (Figure 3-A). A lateral radiograph will confirm the suspicion of placenta previa if the sinusoids are seen to overlie or reach the vicinity of the cervical os (Figure 3-B). Usually, all dye disappears from the sinusoids fifteen seconds after injection. In abruptio placentae, in which the placenta has separated from the uterus and active bleeding is present, contrast media will collect as a discrete mass within the uterine cavity.

The angiographic observations in hydatidiform mole and choriocarcinoma have been described.[7, 8] Although the vascular pattern of hydatidiform mole appears to be similar to that in normal pregnancy, arteriovenous malformations are a prominent feature in choriocarcinoma.

In tubal pregnancy, the enlarged uterine artery is seen to be displaced and to arch

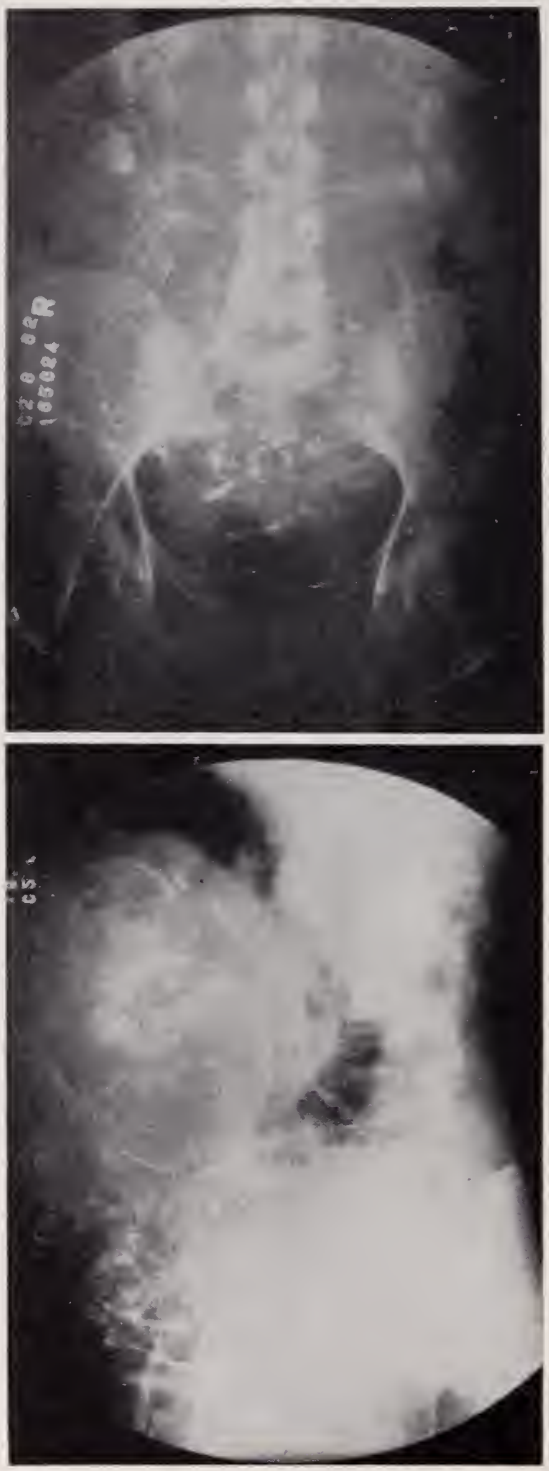


Figure 3. Placentogram of placenta previa. A) Anteroposterior projection shows the placenta to lie in the true pelvis. B) Lateral projection shows the placenta to be central in position covering the cervical os, placenta previa centralis.

around the placental sinusoids it supplies. Once the placental tissue separates, diagnosis by angiography is difficult. However, in cases of tubal pregnancy with escape of placental tissue into the peritoneal cavity, the diagnosis can usually be made clinically.



Figure 4. Pelvic angiogram in a habitual aborter, five seconds after injection, shows the uterine arteries to be enlarged and filled with dye.

Gynecologic Conditions

Although rarely needed for accurate diagnosis in gynecologic disorders, pelvic angiography has been helpful in the diagnosis of adnexal tumors, uterine fibromyoma, and pelvic inflammatory disease. Adnexal tumors and uterine fibromas cause displacement of the uterine artery in its adjacent portion with nontortuous feeder vessels and vessels within outlining the tumor. In inflammatory conditions of the pelvis the vascularity is greatly increased with multiple, fine, tortuous channels simulating an arteriovenous aneurysm.

In an effort to understand better the unknown etiology of sterility and abortions, we performed pelvic angiography on 11 women. Four of them had been unable to conceive, and the other 7, although able to conceive, had aborted habitually. No

demonstrable abnormality was noted in the course of the pelvic vessels. However, in 3 patients the uterine arteries were increased in size and tortuosity and opacification persisted in these vessels after clearance of the dye from the remainder of the pelvic vessels (Figure 4). Although no conclusions can be drawn in regard to this phenomenon, it can be postulated that obstruction to the "outflow" of the uterine arteries exists. Further study is in progress to determine the frequency of uterine arterial stasis and its significance in these individuals.

Discussion

Pelvic angiography can be safely performed with little or no discomfort to the patient. Arteriographic catheterization technics have been used extensively in our institution for selective angiography, particularly for visualization of the great vessels from the arch of the aorta and branches of the abdominal aorta. In the past years, we have extended the indications for this procedure to study of the pelvic vessels in 38 women with suspected obstetrical or gynecologic disorders. No complications have occurred in any of these patients. Complications to be avoided are hematoma at the site of puncture, sensitivity to or toxicity of the contrast medium, dissection of the vessel wall by the guide wire, dislodgement of an intravascular plaque, and thrombosis of the vessel. These mishaps can be prevented by careful attention to technical details.

After injection of radiopaque dye, the patient may experience a burning sensation in the buttocks and those regions supplied by the pelvic vessels. Also, pressure from the pneumatic arterial tourniquet in both sides causes uneasiness. However, this discomfort is fleeting and can be suppressed by proper premedication.

The possibility of harmful effects to the fetus from roentgenary exposure should not deter use of pelvic angiography if the knowledge gained may be helpful to both mother and fetus. In our institution the amount of radiation has been less than that received from intravenous pyelography and half that received from pelvimetry.

Summary

Pelvic angiography is a valuable diagnostic adjunct to the management of obstetrical and gynecologic disorders. The pelvic vessels and placental sinusoids are best visualized by percutaneous, femoral artery, retrograde, catheter technic, although simple retrograde injections through a large bore needle within the femoral artery provides adequate visualization. With proper precautions, the hazards to the patient and fetus are negligible.

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Muscle Relaxants in Acute Back Strains*

• The use of Methocarbamol, both intravenously and orally, is described in 92 patients, with excellent results in 54.

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Lake Charles

THERE is probably no condition that is harder to deal with than low back pain. The presence of definite objective findings does make it easier to treat. In this discussion we will limit ourselves to the acute back strain with objective findings.

In the past five years, a number of drugs have been introduced that have muscle relaxing properties, especially involuntary contraction. However, many of these drugs have undesirable side-effects which make them less useful or somewhat hazardous.

In our clinical experience we have used Mephenesin, Meprobonate, Chlorpromazine and Methocarbamol. We have found that the latter gives greater relief of muscle spasm and pain for a longer period of time without undesirable effects or toxic reaction. This paper will be devoted to the use of Methocarbamol in acute back strains.

Truitt and Little[1] from the Bowman Gray School of Medicine were the first to determine the inhibition of polysynoptic spinal reflexes by methocarbamol. They showed that the drug did not act directly on the muscle but had a selective reaction on the central nervous system.

Method of Administration

In this group of patients Methocarbamol was used by intravenous and oral administration. Methocarbamol, 100 mg. per cc. in a sterile 50 per cent solution of polyethylene glucol 300 in water with 0.1 per cent sodium bisulfite preservative was given intravenously, taking three to six minutes to administer. These patients were given this routinely at time of first examination. Following the intravenous administration these patients were given oral Methocarbamol.

Contrary to other investigators[2] we did get depression of respiration on two patients that the intravenous injections were too rapid (under three minutes).

We followed each patient with oral administration. The dosage varing according to the reaction and size of the patient. The average dosage was one gram every four hours while awake. On a few instances we used two grams every four hours and in one case three grams every four hours.

Patient Selection

These patients were selected from an industrial population (petroleum refining and petrochemicals) of approximately 4600. The total number in this study is 92. There were two others who could not be followed until complete relief of symptoms occurred, and therefore, are dropped from the study.

In the 92 cases 7 of these presented acute back strains with ruptured intervertebral disc. The 7 patients with ruptured disc were given Methocarbamol preoperatively and postoperatively.[3] The remaining 85 patients did not present any positive neurological findings. However, this group did show a definite evidence of muscle spasm, this was either a trunk list, spasm of the muscles, poker back, etc.

The ages of these employees varied from 22 yrs. to 67 yrs.. The average age of this group was 37 yrs. This average age is consistent with the age of most frequent back injuries reported by Crookshank & Warshaw in 1959.[4] Of the 85 with acute low back strain 38 showed some bone abnormality such as arthritis, interspace narrowing, abnormal facets,

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 9, 1961, New Orleans.

spondylolisthesis, etc. These employees came from all types of work; boilermakers, laborers, iron work and office employees. Needless to say a very small percentage came from the office employees.

Criteria for Evaluation

The response to Methocarbamol administration was rated as follows: [5]

Excellent: Relief of symptoms — returned to full duty within two hours.

Good: Partial relief of symptoms—returned to regular work or slightly restricted work.

Fair: Slight relief of symptoms—able to return to restricted duty only with no time loss.

None: No relief of symptoms and additional therapy required with time loss.

Response to Therapy

The response to Methocarbamol at first was rather exciting but as time progressed it was quite obvious that this was the most effective muscle relaxant we had used. Again all of these patients received intravenous and oral Methocarbamol. Twenty-two patients in this group got excellent results and returned to regular work. The average number of intravenous doses was 3.4 in this group with five days of oral medication.

Good results were shown on 54 who received an average of five intravenous doses and eight days of oral therapy. Some of these men had slight limitations of their duties but there was no time loss. There was objective decrease in muscle spasm in both of the above groups with almost all spasm being gone in the excellent group within twenty-four hours and only slight residual in the good group in forty-eight hours.

Nine patients got only fair relief and did miss some time from work (8½ hrs. average). This group received an average of six injections and fourteen days oral therapy. One patient was operated upon for ruptured intervertebral disc at L4--L5.

Seven patients got no relief at all. They all received six injections and fourteen days of therapy. Six of these patients had ruptured disc removed and one was not relieved until he was given six weeks of bed rest. Of the 7 treated by operation, four stated their pain in leg muscles and back was relieved by the Methocarbamol postoperative (Table 1).

TABLE 1
RESULTS IN METHOCARBAMOL THERAPY

Areas Affected	Excellent	Good	Fair	None
Lumbar Area	22	54	8	1
Ruptured Disc	0	0	1	6
Total:	22	54	9	7
	(23.9%)	(58.7%)	(9.8%)	(7.6%)

Side Effects

Side effects were minimal and in the two cases that did present side effects they did not last over fifteen minutes. One patient suffered mild depression of respiration and one complained of blurring of vision, nausea and metallic taste in the mouth. If the necessary precautions that should be taken with any intravenous injection are taken, such as slow rate of injection and careful observation, no difficulty should arise.

Comment

It appears to us that the *modus operandi* is by physiologic blocking of polysynoptic reflexes. This study is limited to muscle strain and a small number of ruptured intervertebral disc. It is noted that only one of the mechanical injuries was slightly relieved and six not at all. Therefore, it has little use in mechanical defects.

Summary

In this clinical study of 92 patients using Methocarbamol (Robaxin) 23.9 per cent got excellent results and 58.7 per cent good results. These men missed no work and were relieved rapidly. This totals 86.6 per cent of those treated.

The intravenous and oral combination is more effective than oral administration alone. This drug is a safe drug and is more effective than any muscle relaxant we have used for low back strain and postoperative muscle spasms.

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Serendipity in Drug Research

Everybody who talks about the products of the future, should admit from the outset that he doesn't know what he's talking about. Because we literally don't know—and in some ways can't even imagine—what will turn up. . . . Drug research today doesn't proceed in a logical straightforward line from the discovery of the cause of a disease to the discovery of a treatment for that disease. Instead, scientists experiment with a broad range of chemicals, related chemicals, and chemicals related to the related chemicals. Some of the greatest breakthroughs in the industry were found while working on something else. The new diuretics, for example, came while looking for a way to keep the kidneys from excreting penicillin too rapidly.—Walter A Munns, President, Smith Kline & French Laboratories, to New York Society of Security Analysts.

Cutaneous Manifestations of Systemic Disease*

• The author lists the many entities which become apparent on the skin in deeper lying disease states.

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Monroe

MOST systemic diseases have cutaneous manifestations. The diagnosis is often suspected and proven on the basis of cutaneous signs and symptoms. Although gross changes in the skin are of utmost importance, histological studies are useful in the diagnosis of many disorders. Also, skin testing with various protein, bacterial, and fungal allergens gives valuable information in numerous systemic diseases.

Pruritis

Pruritis may be the result of an underlying systemic illness. Endocrine disease such as diabetes mellitus and hyperthyroidism may produce itching. Biliary cirrhosis, obstructive jaundice, hematopoietic disorders, such as leukemia and polycythemia, Hodgkins disease and renal disease are also examples. Visceral malignancy (e.g. lung, pancreas, breast and stomach) may produce a persistent pruritis. In addition allergic reactions to drugs, foods or other allergens are frequent.

Diseases of Blood Vessels

Damage or functional disturbances of the blood vessels of the skin result in a wide variety of visible changes and often are associated with systemic involvement. A classic example is periarteritis nodosa which is a necrotizing arteritis or arteriolitis involving any organ system and produces cutaneous lesions such as painful subcutaneous nodules and purpuric areas. An example of a functional vascular disorder is Raynaud's disease which may be present in arteriosclerosis obliterans, thromboangitis obliterans, scleroderma and cervical rib anomalies. Livedo reticularis is due to spasm of cutaneous arterioles and may be associated with cryoglobulinemia or systemic lupus erythematosus.

Purpura is due to extravasation of blood into the skin or mucous membranes following vascular damage. It may be due to decreased extracapillary tissue support as seen in senile purpura, Ehlers-Danlos syndrome or Kaposi's idiopathic hemorrhagic sarcoma. Also, weakened endothelial adhesion as in scurvy will produce purpura. Other conditions associated with purpura are leukemia, polycythemia vera, pernicious anemia, systemic lupus erythematosus, Henoch-Schoenlein syndrome, erythema multiforme and "idiopathic" thrombocytopenic purpura. In addition drug sensitivity, infection and coagulation defects have to be considered in establishing the etiology of purpura.

Telangiectasis may indicate internal disease as in Hereditary Hemorrhagic Telangiectasis (Osler). Even the common arterial spiders (Nevus Araneus) are sometimes the result of liver disease.

Erythema of the palms is observed in pregnancy, hepatic cirrhosis, tuberculosis, rheumatoid disease and as a rare inherited disorder.

Erythema multiforme is a symptom complex and presents as urticarial, bullous and/or purpuric lesions. The etiology may be systemic infection, drugs, malignancy or food allergy. Stevens-Johnson syndrome is a bullous variant of erythema multiforme and may be fatal.

Urticaria may be seen in hepatic disease, hematopoietic disorders, renal disease, rheumatic fever and carcinomatosis. Urticaria pigmentosa may be associated with internal mastocytomas. Serum sickness reactions are usually accompanied with urticaria.

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 8, 1962.

Metabolic Disease

In this group the disturbances in the utilization of lipids are the most important. Mucocutaneous changes due to vitamin deficiencies are very infrequent. However, pellagra, due to a deficiency of nicotinic acid and other vitamins of the B complex, is occasionally seen. It is a serious systemic disease affecting the skin, alimentary tract and central nervous system. Cutaneous changes due to disturbances in protein metabolism are rare although a few cases of Kwashiorkor have been reported in this country.

Xanthelasma is the most common type of xanthoma. These are flat-topped, yellow, elevated plaques involving the eyelids. They may occur alone or with the skin lesions of xanthoma tuberosum or xanthoma disseminatum. Roughly one-half of the patients with xanthelasma have an elevated serum cholesterol. Atherosclerosis and diabetes mellitus are frequently present. Xanthoma tuberosum and tendinosum is the second most common type of xanthoma. Yellow nodules and plaques are located mainly over extensor surfaces. Atherosclerosis and angina pectoris are common. These cases have an elevated total and ester cholesterol with usually a clear serum. Xanthoma disseminatum presents as small yellow papules on the flexor surfaces and frequently involves mucous membranes of the oropharynx and larynx. There may be diabetes insipidus. Serum cholesterol and total lipid values are normal. Xanthomas may also be present in hypothyroidism, portal cirrhosis, chronic pancreatitis and nephrosis. Hand-Schuller-Christian syndrome is characterized by membranous bone defects, exophthalmos and diabetes insipidus as well as xanthoma disseminatum. It is classified along with Letterer-Siwe disease and eosinophilic granuloma as a normocholesteremic xanthomatosis.

Many other disorders of metabolism have cutaneous lesions. Necrobiosis lipoidica diabeticorum consists of oval, yellowish plaques usually on the anterior surface of the lower legs. Many of these cases have or subsequently develop diabetes. In primary systemic amyloidosis the amyloid deposits are present in the skin and produce nodules as well as purpura. Macroglossia and glossitis are noted; there may be involvement of the heart and viscera. Porphyria cutanea tarda is frequently the result of chronic alcoholism with resulting hepatic damage. The erythropoietic type is familial and characterized also by photosensitivity.

Pigmentary Disturbances

Acanthosis nigricans is divided into a benign (juvenile) type and malignant (adult) type. This distinction is made since most cases of acanthosis nigricans beginning in adult life are associated with internal cancer.

Albright's syndrome shows the triad of large plaques of hyperpigmentation, polyostotic fibrous dysplasia and precocious puberty in girls.

Incontinentia pigmenti is characterized by bizarre shaped areas of pigmentation. In addition to ectodermal defects, congenital heart disease and chondrodysplasia may be present.

Ochronosis is associated with arthritis, black urine, and pigmented cartilage. It is an heriditary condition and is a defect in the metabolism of tyrosine.

In Addison's disease hyperpigmentation and/or vitiligo may be present. In Peutz-Jeghers syndrome the small areas of melanosis of the lips, oral cavity, and fingers are associated with intestinal polyps.

Granulomas

The granulomas often have associated internal and cutaneous lesions. Examples are tuberculosis, syphilis, leprosy and sarcoidosis. The deep mycoses such as histoplasmosis, coccidioidomycosis and blastomycosis usually begin as a pulmonary infection and the skin may be secondarily involved. Even in the absence of cutaneous lesions skin testing may yield valuable information.

Neoplasms

The lymphomas arise from the cell series of the lymphoid and reticuloendo-

thelial systems; the accompanying cutaneous lesions may be specific (direct involvement of the skin with the malignant cells) or nonspecific (leukemids). Mycosis fungoides is a lymphoma originating in the skin. Even in this disorder involvement of internal organs sometimes occurs.

Bowen's disease usually appears as a single scaly, erythematous patch and may involve any portion of the skin. It is an intraepidermal squamous cell carcinoma. There seems to be an increased incidence of internal carcinoma in these cases.

Paget's disease is usually present on the female areolar area. Paget's cells apparently arise from an underlying carcinoma of the mammary ducts. An analogous process is seen in extramammary locations where apocrine glands are commonly found —e.g. vulva, perianal area and umbilicus.

Multiple idiopathic hemorrhagic sarcoma (Kaposi) presents as pigmented macules and nodules usually on the lower extremity in middle aged or older males. There is systemic involvement in about 10 per cent of the cases.

Neurofibromatosis (von Recklinghausen's disease) may produce the triad of pigmented patches, sessile or pedunculated tumors of the skin and tumors of the nerves. The characteristic cafe au lait spots may be a valuable diagnostic clue in the absence of the cutaneous tumors. Developmental anomalies are also common.

Epiloia is a triad of mental deficiency, epilepsy and skin tumors. Tumors of the brain when present are designated "tuberous sclerosis" whereas the skin tumors are known as "adenoma sebaceum."

Other Disorders

The collagen diseases include lupus erythematosus, dermatomyositis and scleroderma. The associated cutaneous and systemic findings are well known. In dermatomyositis 20 per cent of the cases have an associated adenocarcinoma; therefore, a diagnostic study for an internal neoplasm must be done in adult patients.

Summary

Systemic diseases usually produce cutaneous signs or symptoms. The changes in the skin often makes the diagnosis possible. Histopathological study of biopsy material and skin testing with appropriate allergens may also provide information about an underlying systemic disorder.

Discussion

Dr. William J. Perret (New Orleans): I would like to begin by commending Dr. Bunch for compiling such a comprehensive list of the cutaneous manifestations of internal disease. Never have I heard the subject covered so thoroughly.

One is amazed at the variety of skin conditions that may arouse suspicion of an underlying systemic disease. Simple itching, purpura, telangiectases, erythema, erythema multiforme, urticaria, xanthomas, various pigmentary disturbances, granulomas and tumors have all been listed as possible clues to systemic disease.

When the skin shows obvious pallor, cyanosis or jaundice it immediately alerts the physician to the state of health of the body as a whole. Too often, however, the skin is considered to be a barrier that obstructs a clear view of important internal pathology. Were it not for the skin one could more easily see what is really bothering the patient. Except when treating neoplasms of the skin itself the surgeon must incise and retract the skin to reach the structure that requires operative procedures. The family doctor and internist must penetrate the cutaneous barrier by palpation, percussion, auscultation or diagnostic x-ray. Dr. Bunch has pointed out that in many instances the skin is not a barrier, but actually a source of illumination about what is going on in the rest of the body.

I do not wish to leave the impression that the skin always or even often serves as a true index of the general body state. We know that the skin can be terribly diseased with no great danger to the patient's life. We also know that a patient can be critically ill and still show an apparently normal skin.

What I would like to get across to you is the idea that the dermatologist can be a useful consultant in certain cases. In addition to recognizing the diseases peculiar to the skin with no important consequences to the general health, he is also qualified by training and experience to recognize those cutaneous lesions which may be of great significance to the patient's general health.

Idiopathic Hypercalcemia in Two Siblings

• It is hoped that increased recognition of this condition may lead to an improved understanding both of its pathogenesis and of calcium metabolism in general.

ELLEN P. MacKENZIE, M. D.
Gretna

IDIOPATHIC hypercalcemia of infancy is a condition of uncertain etiology which is rarely reported in this country, but which in recent years has been the fifth commonest cause of hospitalization of infants in England.[1-5] The cases reported [6-12] range from a benign form needing little treatment [5] to intractable disease ending in uremic death.[3, 8, 9] Its recognition is facilitated by a typical facies [3, 12] for which the mechanism is unknown; and confirmed solely by finding the serum calcium elevated. There is no demonstrated relation to Vitamin D overdosage,[13, 14] parathyroid dysfunction, other endocrinopathies, or primary renal or bone disease.

To stimulate interest in this possibly overlooked condition, a case is presented in which an infant was essentially asymptomatic, being recognized only by the characteristic facies, and in whom the course was benign despite very high blood calcium. There is further interest in the finding of hypercalcemia in his apparently normal older brother, as familial incidence is not noted in the literature.

Case Reports

Case No. 1. Stephen C. was born in New Orleans of an uncomplicated term pregnancy. He drank evaporated milk for nine months, then whole fresh milk up to 20 ounces a day. His diet consisted of baby food, plus a raw egg yolk daily from age three months. His only vitamin supplement was Poly-Vi-Sol®, 0.3 cc. daily. DPT and poliomyelitis immunizations were uneventful. His medical record between ages two and nine months, when he lived in Cuba, was not available, but he was said to have no illness beyond one earache.

He was first seen July 21, 1960, at age ten months, for routine examination; his only complaint was hard, blood-streaked bowel movements for two months. Examination showed him to be of normal height (50th percentile) and thin (10th percentile), pale and rather irritable. Eight normal teeth were present. The musculo-skeletal



1a. S. C. at 11 months. The large, low-set ears and narrow temples are evident, as are the concavity of the costal margins and the normal motoro coordination for age.



1b. S. C. at 4 or 5 months. Large low ears, narrow temples and loose overhanging upper lip are distinguishable.

system showed rather poor muscle development and slight pigeon breast, but normal muscular coordination. A faint systolic murmur was presumably functional, as it was heard only at the first examination. He clearly showed the "elfin" facies, with narrow temples, big low-set ears, loose prominent upper lip and wide-set eyes (Fig. 1a) which is considered typical of hypercalcemia; snapshots furnished by the mother showed that this was distinguishable by age 5 months. (Figure 1b)

On symptomatic treatment, which included discontinuing milk, his constipation improved. One week later his arm blood pressure was 100-110 by flush method; it never exceeded this figure. At this time blood calcium was examined and found to be 17.9 mg. per cent.* After this report, vitamins were stopped and he was put on a low-calcium diet. He was later given a home-mixed meat formula, which he tolerated well.** By August 9, laboratory findings were:

Urinalysis normal
Calcium 14.2 mg. per cent
Phosphorus 5 mg. per cent
B.U.N. 12.1 mg. per cent
Albumin 4.75 gm., globulin 2.1 gm.,
A/G ratio 2.26

X-rays of abdomen, kidneys and long bones showed no nephrocalcinosis or bony abnormality; the skull was not X-rayed. By August 23, his blood calcium was 11 mg. per cent; urine (Sulkowitch) was faint positive. At this time, because of the inverse relation between serum calcium and citrate [4,13], he was given oral citrate mix (Na and K citrate āā 25 g., citric acid 70 gm., water q.s. ad 500 cc.) 2 tablespoons daily for 2 weeks, then 1 tablespoon daily for ten days. The Sulkowitch test became moderately positive during this time, urine specific gravity rose to 1.035, and rare white blood cells were found in the urine sediment, persisting after citrates were stopped. On September 8, laboratory findings were:

Calcium 10.7 mg. per cent
B.U.N. 13.5 mg. per cent
CO_2 23 mEq/L

Citrate therapy was abandoned as of no benefit; five days later his blood pressure was 80 by flush method, the lowest reading obtained during observation. At this time, because of failure to gain weight despite normal linear growth, he was started on Meticorten®, 1 mg. daily. After a month of steroid therapy, his mother, without mentioning the steroid therapy, had an otolaryngologist remove an epidermal inclusion cyst from his uvula under general anesthesia. He had bronchitis, otitis media, and weight loss thereafter but recovered in a few days. It was intended to give a larger dose of steroid later, but this was prevented by his family's move to another city. He was seen the following December and February (1961); by the latter visit he was walking well since age fourteen months, had 14 teeth, and had maintained steady linear growth while remaining thin. Blood calcium was 10 mg. per cent; his facies was unchanged. Because of the mother's emotional attachment to milk, he had obtained a low-calcium milk from England; he tolerated this in small amounts but became constipated if he exceeded one cup a day.

Note: The father reported by letter May 1962, that the blood calcium had been found normal and the patient remained asymptomatic.

Case No. 2. Mario C., the older brother of *Case No. 1*, was born in New Orleans of a normal pregnancy and delivery. He had uneventful DPT, poliomyelitis and typhoid immunizations, oxyuriasis at age two, and a herniorrhaphy at age three. Vomiting and diarrhea at age three and a half necessitated intravenous therapy. He was constipated for three years, receiving frequent laxatives. He was fed strained foods for two years; by age four, his diet included 24 ounces of milk daily, 5 eggs weekly, rare seafood, and meat which was chewed without swallowing. His only vitamin supplement was Clusivol®, 1 teaspoon daily. Neuromuscular development was normal; snapshots showed no suggestion of hypercalcemic facies in infancy (Fig. 2). When first seen July 8, 1960, he had acute mild vomiting and diarrhea. Examination showed him to be thin, pale and alert; his height was on the 50th percentile line, his weight on the 25th percentile. His asthenic musculature, thin face and prominent ears closely resembled his



2a. M. C. at 18 months. Facies normal.

* All blood calcium determinations were performed by Harris and Friedrichs Laboratory, New Orleans, and checked each time against calcium standards.

** 4 cans strained meat, 4 oz. Karo, 3 oz. cooking oil, water q.s. ad 1 quart.



2b. S. C., 11 months, and M. C., 4-2/12 years. Moderate family resemblance in chest shape, muscle development and ear size is apparent.

father's habitus rather than suggesting hypercalcemia. His blood pressure was 90/64; a soft systolic murmur was considered by the cardiology consultant* to be functional. Tuberculin test, stool and pinworm tests were negative; his hemoglobin was 10.5 gm. After discovery of his brother's hypercalcemia, his blood calcium was checked and found to be 14.48 mg. per cent. After avoidance of milk, it dropped to 10.4 mg. per cent. His hemoglobin rose to 12.0 gm. on oral iron therapy, but he gained no weight. Because of this, he was given Meticorten®, 1 mg. b.i.d. for one month. On this therapy, he was lively with good appetite, but became irritable and anorexic afterward, at which time the mother had resumed giving milk. When seen in January 1961, his blood calcium was 11.3 mg. per cent on an allegedly low-calcium diet, but he seemed well.

The family history, as usual in such cases, was non-contributory. The father was Cuban, aged 36, the mother American, aged 32. The only familial disease was "sinus trouble," possibly allergic, in an aunt and uncle. The father had received calcium injections in childhood for reasons unknown to him; this is a common treatment in Latin countries. Unfortunately blood calcium determinations were not performed on the parents.

* Dr. Fancis Puyau, LSU Department of Pediatrics.

Discussion

No one feature of this disease is a reliable indicator of the prognosis. The typical facies, basal skull osteosclerosis, systolic murmurs, hypertension, and mental and physical retardation are associated in random fashion. Prolonged observation of renal function, particularly, is necessary to determine whether a patient will, like Case 1, "outgrow" his disease despite enormously high initial blood calcium, or progress relentlessly, like some children whose hypercalcemia is relatively moderate, to renal failure and uremic death. For benign cases, avoidance of high-calcium foods and of Vitamin D is sufficient; incidence of the disease has decreased in England since the standard recommended dosage of Vitamin D was decreased from 2000 to 1000 units daily. For severe cases steroid therapy is of great benefit, but the disease sometimes terminates fatally regardless of medication.

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Principles of Inhalation Therapy in Pediatrics*

• Anoxia is classified and the disease states that require inhalation therapy are given.

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Introduction

THE very fact that an Internist is speaking to a group of pediatricians on a subject that was formerly reserved for Anesthesiologists, in brief, summarizes the changes in concepts of Inhalation Therapy.

At one time the use of oxygen was restricted to only the desperately ill, and more often than not, as a last resort. Later still, it was used in an opposite manner on the theory that if a little was good, then a lot was much better and its indiscriminate use resulted in tragic results as well as needless expense to the patient. Gradually however, Inhalation Therapy evolved into a broad system of therapeutics involving many different types and techniques. The specific apparatus and modes of administration to be used are determined, of course, by the psysiologic needs and the clinical picture of the patient. It is with this viewpoint in mind that the principles of Inhalaion Therapy in Pediatrics will be discussed. The various methods used can be generally divided under the following headings:

1. The administration of oxygen, helium-oxygen mixtures, etc., by catheter, mask or various tent arrangements.

2. The use of intermittent positive pressure machines.

3. The use of mechanical respirators.

4. Techniques of administration of bronchodilators, humidifying, antibiotic and sputum liquefying aerosols.

* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, May 4, 1960, Baton Rouge.

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Types of Anoxia

By strict definition, anoxia means total lack of oxygen, by traditional usage however, we use the term in any state where there is an "oxygen want" or where there is a reduced level of oxygen in the body regardless of cause. Before treatment can be instituted in a disease state, a diagnosis must first be made. This is particularly true in the treatment of an anoxic condition, for the etiology of anoxia is manifold and physiologic understanding of the cause will readily determine the proper therapy.

The classification of anoxia by Comroe is most helpful both in an etiological and therapeutic sense. (See Tables 1-5). The process of respiration can be divided

TABLE 1
I ANOXIA IN NORMAL LUNGS
(PROBLEMS OF VENTILATION)

A. Deficiency of Oxygen in Environment.
  1) High altitudes.
  2) Suffocation by contaminating gases.
  3) Suffocation in limited areas.

B. Obstruction to Oxygen Flow.
  1) Foreign body.
  2) Edema of pharyngeal or laryngeal structures.
  3) Paralysis of vocal cords.
  4) Bronchial constriction, spasm edema or secretions.

C. Failure of the Muscles of Respiration.
  1) Central failure.
    a) Asphyxia neonatorum.
    b) Increased intracranial pressure.
    c) Trauma to respiratory centers.
    d) Excessive doses of anesthetics, barbiturates or other depressant drugs.
  2) Peripheral disorders.
    a) Poliomyelitis.
    b) Myesthenia gravis.
    c) Peripheral neuritis.
    d) Administration of curare-like drugs.

TABLE 2

II ANOXIA IN ABNORMAL LUNGS
(PROBLEM OF GASEOUS EXCHANGE)

A. Diminished functioning lung tissue.
   1) Congestive heart failure.
   2) Pneumothorax.
   3) Pneumonia.
   4) Pleural effusion.
   5) Infarction.
   6) Space occupying lesions.
   7) Atelectasis.
   8) Extensive surgical removal.

B. Obstruction to diffusion of gases through the Aveolar-Capillary Membrane.
   1) Same as A, 1 through 3.
   2) Pulmonary fibrosis.
   3) Mucoviscidosis.
   4) Diffuse pulmonary hemorrhages.
      a) Teliangectosis.
      b) Blast injury.

TABLE 3

III ANOXIA DUE TO VENOUS ARTERIAL SHUNTS

1) Congenital heart disease.
2) Pulmonary hemangiomata.
3) Conditions in which blood is circulating through un-aerated alveoli.

TABLE 4

IV ANOXIA DUE TO BLOOD TRANSPORT ABNORMALITIES

A. Decreased Hemoglobin.
   1) Anemias.
   2) Methemoglobinemia.
   3) Carbon monoxide poisoning.

B. Deficient circulation.
   1) Generalized.
      a) Shock.
      b) Hemorrhage.
      c) Congestive heart failure.
   2) Localized.
      a) Peripheral vascular disease.
      b) Thrombosis or emboli.
      c) Vasoconstriction due to intense cold.

TABLE 5

V ANOXIA DUE TO INADEQUATE TISSUE OXYGENATION

A. Tissue edema (interfering with diffusion of oxygen from capillaries to tissue cells).

B. Abnormally high tissue demand.
   1) Fever.
   2) Burns.
   3) Hyperthyroidism.

C. Poisoning of cellular enzyme systems.
   1) Depressed dehydrogenose systems by excessive sedative drugs.
   2) Depressed cytochromic oxidase systems by cyanide.

into essentially four divisions: (1) Ventilation. (2) Gas Exchange (Pulmonary). (3) Transport. (4) Tissue gas exchange.

Recognition of Anoxia

Unfortunately the recognition of anoxia is too often confused with the appearance of cyanosis or actual respiratory distress. If Inhalation Therapy is to be of any real service, the earlier signs of anoxia must be anticipated. The signs are based primarily on three factors:

1. The speed with which the oxygen lack developed. Obviously if there is a rapid development (such as obstruction to the airway by a foreign body) the earlier signs of anoxia will be bypassed and the more advanced stages will be evident at once.

2. The mechanism of its development. Obviously the child suffering from anoxia due to respiratory paralysis in barbiturate intoxication will differ in the signs of the child with obstruction. The cherry red appearance of the child with methemoglobinemia is markedly different from the cyanosis of the pneumonia or congenital heart patient.

3. The condition of the patient or rather the amount of cardiovascular or pulmonary reserve greatly influence the degree and rapidity of development of anoxic signs. It must also be remembered that a patient in mild anoxia with increasing exertion may demonstrate the same symptoms as shown by a case of severe anoxia at rest. The symptoms of a newborn with anoxia would be that of a patient in severe anoxia due to his limited reserve. The obvious signs of anoxia include rapid, shallow pulse, cyanosis and dyspnea. But first one must look for increased effort and depth of respiration. This usually is followed by increased pulse rate, rapid respiration, fatigue and weakness. There is also a lack of fine muscle coordination with twitching of muscle groups, followed by spasms and convulsions. As the anoxia becomes more severe, other signs become evident, such as increased excitability and nervousness. In older children and adults there is loss of judgment and memory.

Remember that it is difficult or impossible to detect cyanosis in severe anemia because of insufficiency of hemoglobin, or in shock, because of the marked constriction of surface vessels and decrease in capillary blood. Thus, severe or fatal tissue anoxia may occur without the warning sign of cyanosis.

On the other hand, blueness of the skin may occur without any concomitant arterial anoxemia. This is especially true when the cutaneous arterioles are narrowed due to cold or neurogenic influences. In such cases, the blood flow is so slow that the tissues extract most of the oxygen from the blood.

The Use of Inhalation Therapy

The primary purpose of Inhalation Therapy is to treat the anoxic patient and as with any therapeutic agent there are definite modes of administration and dosages dependent on the disease and condition of the patient. While digitalis given in therapeutic dosages may well be life saving, it can also destroy the patient if not handled with care. Similarly oxygen should be treated as a drug with the potentials of producing death as well as life.

It was only in the last six or seven years that we realized that retrolental fibroplasia which accounted for 650 blind children every year was probably due to overdosage of oxygen in the premature incubator. A premature infant should never be exposed to more than 40 per cent concentration and preferably have periods below 30 per cent, especially in multiple birth premature, if this dreaded complication is to be averted. Note that I state concentration percentage rather than liter flow. It should be common practice to check the concentration using an oxygen analyzer at periodic intervals. The liter flow gives a rough index to the concentration but leaves too many variable factors such as oxygen leakage, flow guage errors, kinked tubing, etc.

Reviewing our etiologic list of anoxia, one can follow readily what steps should be used in the treatment of these patients. First treat the etiologic factors then use oxygen as an assist. In children I rarely use nasal catheters for oxygen therapy because the catheters are irritating to them, can easily be pulled loose and very often cause acute gastric dilatation. Therefore, infant's incubators, O_2 tents or face masks (either open or closed) are used. Where concentrations are not required over 40 to 50 per cent, then the open top tent or mask offers the advantage of decreasing the apprehension of the patient and not requiring refrigeration. With our TV space cadet publicity, the open face mask is very popular with the children and apprehension is minimized. Also, it is easier for nursing care. I always use humidifiers with oxygen therapy as the flow of oxygen has marked drying qualities.

In cases of anoxia with normal lungs but where there is failure of the muscles of respiration, then an artificial respirator should be used in conjunction with the oxygen administration. At our hospital we have had a great deal of success with a chest cassette respirator in that nursing care is simplified; there is greater portability and two patients can be treated at the same time, using one central machine.

There is a great deal of debate concerning the use of intermittent positive pressure machines in the treatment of anoxia where there is a problem in gaseous exchange. Some feel that the secretions are forced further back into the bronchioles and aveoli. Another criticism is that the positive pressure produces overinflated lungs. My own feeling is that it is a useful tool when properly applied. By limiting the positive pressure to less than 10 cms. H_2O, I doubt that either of the criticisms are justified. It has the distinct advantage of then acting as a method of penetrating the secretions with detergents and bronchodilators as needed. The most popular of these is a mixture of ½ cc Isuprel to 4½ cc Alevaire, given 4 times a day for ten to 15 minute periods. In patients with particularly feeble respiration, an auto-cycling mechanism can be used which will breathe for the patient or assist as required. This is particularly

useful in post-operative patients who are over-sedated. There are many different manufacturers of these devices and most of them are of fairly equal qualities.

In every discussion of Inhalation Therapy procedures and dosages of antibiotics is usually included. I have never felt that the administration of antibiotics in this manner is either effective or particularly safe. It is well known that antibiotics are extremely prone to sensitization and allergic reactions when used in contact applications. Used as an aerosol this danger is further enhanced in that a truly massive reaction can occur due to the tremendous surface area involved. Another problem is that the irritant physical qualities of the antibiotic can cause marked bronchoconstriction further embarrassing the problem of anoxia. Finally where there is really thickened secretion the absorption of the antibiotic is extremely limited.

There is an increasing use of Helium-Oxygen mixtures in problems of obstructive dyspnea in diseases where bronchospasm or stricture (i.e., bronchial asthma) plays a major role. The effectiveness of the Helium-Oxygen mixture is based on the physical principle that the velocity of movement of a gas through a narrow orifice is inversely proportional to the square root of the molecular weight of the gas. The specific gravity of helium being only one seventh that of nitrogen, the pressure required to ventilate with a 20 per cent oxygen and 80 per cent helium mixture through a constricted orifice will be only half as much as would be required for an equal volume of air or oxygen. Increase in oxygen concentrate to 35 per cent can be accomplished by using a "Y" tube attachment to an additional tank of oxygen. A word of caution, however because of the low specific gravity of these mixtures, leak proof fittings about the head by mask are essential. The use of tent with this mixture would be completely worthless. An added benefit could be obtained by using this mixture with an intermittent positive pressure apparatus.

I will not go into detail on the negative pressure or cough producing machines as particularly in children they have very little use and present considerable problems.

Summary

In summary then, Inhalation therapy should be used as a valuable adjunct in the care of the anoxic patient. The physiologic diagnosis must first be made however, so that the proper technique and concentration of oxygen be instituted. It must be remembered particularly in infant children where their pulmonary reserve is so much more limited than in adults, that embarrassed respiration not only is an immediate hazard but a cause of concern in their future development both physical and mental.

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Functional Depression, Its Recognition And Management*

• A summary of the different kinds of depression and a plan of treatment for the functional depressions by the general practitioner.

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OF the armor piercing bullets of advertising, which lurk in the fore and aft pages of medical journals, there are two, recently appearing, which are provocative. One, a matronly pair of hands slowly and determinedly twisting the life out of a handkerchief; in the background a physician regarding them with thoughtful concern. The caption states: "For the tense and anxious patient"[1] The other, a torn envelope on which is scrawled: "about Mr. F's chronic headache—no demonstrable pathology—case for our new psychomotor stimulant????"[2]

Though not conspicuous for advertising excellence, these Madison avenue masterpieces are remarkable for their latent content or manner of depicting the clinician's questioning regarding depressive illness; "What is one dealing with?" "How does one treat it?"

Problems Surrounding Diagnosis

In medical school one learns the "road to heaven" is paved with inspection, palpation, percussion, and auscultation; in some areas laboratory work is considered equally virtuous. Though useful in general medicine the inspective method is inadequate for evaluation of functional depression and must be supplemented. To this end the physician must call upon himself as a measuring device or control whereby the patient's emotions, in terms of appropriateness and depth, are qualified and quantified in terms of what the examiner's own might be under similar circumstances. In essence the physician must ask of himself: "Is there adequate cause for this individual to be depressed, and is the reaction understandable in terms of what my own would be?" Two affirmative to these questions suggest that the depression is physiologic.

Normal "Depression"

Grief and sadness may be direct, intense, and sometimes disquieting to the onlooker; however, these states are not necessarily indications of pathology. These alterations of mood are normal concomitants to important loss, as in the death of relatives, close friends, or other objects of dependency. Society once tolerated, even respected grief as a normal reaction when in context. Not so today! This dignity (and many others) has quickly dissolved under pressure of the heavy demands of contemporary living. Children must no longer cry, for this irritates parents; adults must not weep, for this is a sign of weakness and is incidentally upsetting to others nearby.

The present cultural approach to sadness is that relatives, friends, employers, and acquaintances beleaguer the stricken with activity, comment, and suggestions, all directed at briskly restoring the individual to the former pattern of efficient behavior. Frequently those grieving are hustled to the physician, or some individuals sensing society's low tolerance for sadness, may even come of their own accord seeking magic words or pills.

Be wary and do not fall into the trap. Avoid the compulsion to write prescriptions in the manner of doing something tangible. One does well in such cases to confront the patient with the reality of

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the situation; that is, the state is natural, understandable, and reducible spontaneously with time. These conditions are self-limited and the precipitating losses though indelible on the patient's memory produce no deep-rooted personality changes.

Pathologic Depression

The differential is not easy, the change from sadness to depression is a subtle shift from blue to indigo. What separates normal conditions from those requiring psychotherapy and or medication? In terms of form or descriptive generalities (mood, motor activity, insomnia, anorexia, weight loss, and vegetative changes) they may be much alike in both states. In terms of plausibility, reasonableness, or content lies a big difference.

If, in one's opinion, the external stresses do not appear adequate for the effect witnessed as depression, odds favor a pathologic condition. Is the condition neurotic or psychotic? Were the reaction understandable in terms of what the clinician's might be, but not in terms of cause, the likelihood is that the depression is neurotic. A third category of depressed patients are those who may or *may not* have been have been exposed to an adequate cause, but whose reactions are *not* understandable in terms of the physician's introspection. These are likely to be psychotic.

Medicine is often referred to as an imperfect discipline, and at this stage of its evolution it is possibly true that it is more art than science. (If this be true of medicine, what is the implication for psychiatry?) The physician cannot rely on the traditional methods of diagnosis and treatment when working with functional depression. The psychiatric technique of introspection is good. Its advantages are that it is time-saving, reasonably accurate, and natural to most of us. Ousler emphasized: "listen, the patient is telling you the diagnosis" in paraphrase: "regard yourself and know the diagnosis." How does this technique work?

A fifty-six year old lady is brought to your office by her son who is deeply concerned about his mother's obvious depression. Always a conscientious, scrupulous, and active person, her behavior in the past two weeks has undergone a dramatic change. Weeping has been an almost daily occurrence, she cannot sleep, her appetite is non-existent, and she has lost seven pounds in ten days. On examination the patient is mute but restless. She sits sobbing, relentlessly twisting the handkerchief in her hands. Her skin is dry, her face lined with despair.

When she does finally speak she mentions an argument she had with a neighbor regarding a fence boundary some weeks ago. She tells you about the people who are trying to "do her in" by putting gas through the windows of her house. "No," she has never seen them but she has "heard the hissing noise and smelled something funny." She is convinced that her own family is involved in the conspiracy as well, "for aren't they always talking behind her back?" Besides, what else would explain "this terrible headache which starts here and runs around to here" and leaves her feeling sick and bilious?

Clearing this patient organically, what is the next step? Turning to a text one reads: **"Involutional Psychotic Reaction"** described as follows:

"In this category may be included psychotic reaction characterized by depression occurring in the involutional period, without previous history of manic depressive reaction, and usually in individuals of a compulsive personality type. The reaction tends to have prolonged course, and may be manifested by worry, and intractable insomnia, guilt, anxiety, agitation, delusional ideas, and somatic concerns. Some cases are characterized chiefly by depression and others chiefly by paranoid ideas. Often there are somatic preoccupations to a delusional degree."[3]

It fits, but tells nothing of significance that wasn't already known from introspection; that is, the stress may or may not have been sufficient, but the patient's reaction is hardly understandable in terms of one's own experience. Using this as the norm, one is alerted to the presence of certain malignant symptomatology; mental mechanisms which are not in the realm of normal waking experience, delusions, hallucinations, and hypochondriacal preoccupations.

To "ice" the diagnostic "cake", impress one's colleagues, and put the psychiatric consultant on his mettle, it is well to remember these points: (1) Depressions of later life, in persons with a past history of compulsivity and falling under the third category (i.e. those who may or *may not*

have been exposed to an adequate cause, but whose reactions are *not* understandable in terms of the physician's introspection.) argue for involutional psychotic reaction. (2) Depressions given to remission and recurrence and falling under category three, alert one to manic-depressive or schizophrenic illness. (3) Depression in adult life without antecedent history of same, and falling under category three, suggests psychotic depressive reaction.

Hypochondriasis, somatic delusions, severe guilt feelings, hallucinations, intractable insomnia, severe psychomotor retardation, suicidal rumination, profound retardation of thought, or stupor, are real danger signals; and if present with or without depression should immediately raise the suspicion of psychosis.

Management of the Psychotic

Assuming now that the depresed patient has been categorized, what form of treatment is indicated? If there is a suspicion of psychosis the best thing is to refer to a psychiatrist, and quickly. The incidents of aggressive acting out on self or others is probably higher in this than in any other patient population, possibly 25 per cent.[4] With apologies to the current crop of wonder drugs, electric stimulation treatment is the treatment of choice in psychotic depressions. Frequently, within the space of two treatments, the change is dramatic; attendants can be discontinued, and the patient begins sleeping, eating, and interacting socially. Serious side effects are rare, the only absolute contraindication being acute myocardial infarct. With the use of relaxant drugs such as succinyl choline, the possibility of fracture is minimal. In our own series of administering over 2,500 individual treatments, only one patient, an elderly osteoporotic woman, suffered a spiral fracture of the humerus. In patients given EST, a mild organic overlay frequently develops shortly after the second or third treatment; this is transient, with the most obvious impairment in the area of memory, and in direct relationship to the frequency and number of treatments. Spontaneous resolution of these effects is assured within a four-to-six week post-treatment period. Relapses do occur and when they do it is usually within the first two weeks following cessation of treatments. More often than not one or two more treatments are all that is necessary and these can usually be done on an out-patient basis.

The current trend in management of depression with psychosis is that of combination EST and drug therapy. Some suggest that it can be done with drugs alone. A paper recently appeared which was a comparison study of two well known stimulants, or as they are now called "thymoleptics." The conclusion of this paper is as follows: "it appears that efficacious anti-depressant drugs will produce successful results in some 70 to 75 per cent of patients with affective disorders as a whole."[5] In 1941, a similar study regarding Metrazol reported: "In nearly 73 per cent brings about favorable change classifiable as recovery or as social remission."[6]

Remember the average American is 51 per cent female, 22 per cent Catholic, 14 per cent negro, and 2½ months pregnant. Watch your statistics!

Chemotherapy

Thorazine, though only nine years old, finds itself a great-grandparent, with all sorts of phenothiazine relatives, hydrazine in-laws, and glycolglycerol acquaintances. Though sometimes used in combination with stimulant drugs, Thorazine and its side-chain analogues used alone, are contraindicated in the treatment of depression. Some depressions are marked however by the presence of agitation, as in the lady who strangles handkerchiefs. What does one do with these? From a drug standpoint the combinations Trilafon - Elavil - Cogentin,[7] and Sparine - Tofranil,[8] have been recently reported in the literature with such enthusiasm as to perhaps warrant trial.

For years cerebral stimulants have been the main pharmacologic standby for the treatment of depression under the assumption that the depressed person has a depressed nervous system. There is no proof

of this.[9] In the nineteenth century Freud and Halstedt, co-discoverers of cocaine, used this drug clinically because of its anti-depressant or euphoric effects. Halstedt tried it himself, becoming addicted in the process which was sufficiently upsetting to Freud that he gave up administering drugs altogether, deciding to discover psychoanalysis instead.

Hitler kept a "depressed" Luftwaffe in the air around the clock with a preparation later patented by one of the drug concerns in this country. Dextro-amphetamine sulfate in combination with amobarbital, now is marketed in supposed fulfillment of a need for a drug which stimulates depression but relieves agitation and side-effects of the amphetamine stimulant. Giving this combination for this purpose is like feeding coffee to a drunk, the only result is a wide awake drunk.

What about the new crop of "normalizers," "thymoleptics" and "pschoenergizers"? All, except perhaps Tofranil and Elavil, have an adrenalin skeleton in their closet, and are potentially subject to side-effects similar to the ancestor compound. Marsilid and Catron are hepatotoxic, and frequently produce visual symptoms and should be avoided. Monase, the subject of the envelope advertisement is no longer marketed so there is no need for concern about it. Tofranil and its structural companion claim honor in that they are not, as the detail man will tell you, primarily stimulants. When asked how it works he'll answer, "we have not clearly defined its mode of action, but it is different from that of presently-employed drugs in the field. It is thymoleptic in that it normalizes the underlying depressive mood, and does not characteristically produce excitement or euphoria." Possibly he'll add, waspishly, "and it doesn't inhibit monoamine oxidase!"

The fact of the matter is that research has yet to clearly define the mode of action of any of the drugs used in psychiatry, but here medicine is no worse off than with digitalis. How does that work? From a practical standpoint it does not matter that we lack this understanding any more than not being mechanical engineers prevents us from driving a car. Certain drugs are more helpful than others in management of depression and should be used, though with uncanny perversity the most effective also tend to rate highest in undesirable side-effects. Balancing efficacy against side-effect, the following drugs rate highest in current clinical reports:[10, 11] Nardil, in dosages of 15 to 90 milligrams daily; Tofranil, 25 to 150 milligrams daily; Marplan, 10 to 30 milligrams daily; and Elavil, 25 to 150 milligrams daily. When using any of these, it is a good idea to forewarn the patient that first of all it is not a magic drug, and secondly to allow sufficient time (at least ten days) before expecting improvement.

It must be emphasized that the use of these preparations should be restricted to those patients describable as neurotics, or "borderline" cases.

Psychotherapy in General Practice

With some intuition one can hasten recovery of the neurotically depressed, often without the aid of "magic" pills.

The depressed individual is actually filled with rage. Simmering beneath the surface of despair bubbles an emotional cauldron. Direct expression of anger is difficult for these persons for many reasons; thus it seeps forth in various disguises: teeth gnashing, hair pulling, nail biting, scratching, fist clenching, and occasionally suicide. These are all angry aggressive gestures but self-directed.

Watch the patient closely — especially what he does with his hands. It is educational, but better than this it provides the physician with an entree whereby he can point out to the patient that anger is present. Frequently such accurate confrontation is sufficient to stop the patient weeping and start him listening. It will also function as the first step to rapport. Rapport is not the result of being a "nice guy." It develops only from the physician's active demonstration of his insight into the patient's illness and that he *knows* how to, and *wants* to help. Whether treating "hot

bellies" or "cold natures" the physician-patient dynamics are the same!

Encourage patients to verbalize their anger. If stored emotion is released in words there is less likelihood of physical acting out. Communicate to them that expression of anger can be acceptable but point out its inappropriateness if such be the case. Anticipate a counter-depression if the patient does express anger but if the emotion can find wholesome expression, in your presence, without reproof and censure, pride goes up. "We swell with rage and shrink with fear."[13]

A major difference in depression as differentiated from grief is the hopelessness and pessimism with which the depressed patient tends to forecase his future. This is a point for attack, an opportunity for the physician to reassure that life is not a series of repetitions and stereotypes.

The precipitating cause or loss which from another person's standpoint seems inadequate, affects these individuals only because it is a symbolically-potent reliving of another loss much more important, but far removed and antecedent to their immediate recall. What is witnessed in endogenous depression is the release of the long-repressed emotions surrounding an event or series of events related to the early dependent years of childhood, and distinctly associated with that most important relationship — that of mother to child. Of course, the physician cannot say to the patient, "the reason that you feel the way you do is because this recent incident merely recapitulated an early maternal rejection." With this, the patient would probably look through his tears and think to himself that the doctor was the one who needed treatment. The weak points in his reasoning can be pointed out, however; viz., his tendency to generalize and project his future on the basis of his present despondency.

Use other techniques. When she cries, resist the tendency to pat her on the shoulder and say, "there, there." Solicitude only feeds depression by adding secondary reward. Say instead, "I can see you're very sad. It is all right to cry, but try to tell me what you happened to think of just now that made you cry."

Be permissive but not passive. These persons must draw on the physician's strength for a time. Encourage dormant resources evident in the patient and urge expression. Push him to a healthy search for new experiences.

Use drugs at first, but back off when the patient begins to show strength. Use social agencies, brief the family and do not be afraid of a "curbstone consultation" with the local psychiatrist if things bog down. The general practitioner has the edge. Knowing the whole patient, his bumps and bruises, psychic and physical; familiar with his aspirations, ideals, and traditional means of coping; this knowledge positions one best to critically evaluate patient reactions in terms of consistency with his customary means of adapting or getting by. Here—a plea. When referring a patient, give the consultant as much of an advantage as possible. He doesn't care if the referring physician doesn't know the difference between a manic-depressive and a schizo-affective schizophrenic; sometimes he's not too sure himself. The psychiatrist is a medical cripple. He's long on theory and short on proof, lacking a serologic test for Schizophrenia, and occasionally somewhat disturbed himself. He needs all of the help that he can get!

Summary

The ineffectiveness of traditional methods of medical diagnosis with regard to recognition of functional depression is discussed. The use of introspection as an adjunct is suggested and discussion of various somatic and psychotherapeutic treatment measures available to the general practitioner are described.

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Freedom in the Field of Health Care

Those who advocate more inroads upon our liberty fail to recognize that it is not a mere coincidence that the life span of Americans today is longer than that of the people of any other major nation. It is no accident that there are more than 3,000,000 Americans alive today who would be dead if our national death rate had not been reduced through improved diagnosis and care. These facts are not due to climate, to food, or to public health measures. They are due to the dynamism, the spirit, and the freedom of choice existing today within the field of health care. The three fundamental elements of medicine in this country—the physician, the pharmacist, and the pharmaceutical manufacturer—have worked together in a climate invigorated by the spirit of freedom, and together they have provided medical care unsurpassed anywhere in the world.—Francis C. Brown, President, Schering Corporation, to National Association of Retail Druggists, Oct. 5, 1961.

The New Role of the General Practitioner In the Treatment of Mental Cases with The New Psychobolic Drugs

• A report on the benefits derived from the use of reserpine in mental patients.

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THE new mental drugs are usually called "tranquilizers", but some of them merit a different name. Some actually change the patients' thinking, as well as to render the patient more serene and calm. For this class of the new mental drugs, I suggest the name: Psychobolics (psyche or mind; bole or change). As to how many of the new mental drugs merit this classification, it is not clear at this time. However, it seems that many of the new mental drugs are merely pacifiers, while a few of them actually alter the patients' thinking. One drug which I regard as psychobolic is reserpine (Serpasil); another possibility is thioridizane (Mellaril®). There are probably others, but my experience has been chiefly with Serpasil, and to a less degree with Mellaril. Therefore, I mention these two as examples of the psychobolic drugs.

Now, for the first time, we are in a position to reduce the population of our mental hospitals. Already we have reports of fewer patients in some mental hospitals, and less than the usual and expected increase in others. This is being brought about by the use of the new mental drugs, and by the general awakening interest in mental health and mental diseases, by the public, as well as doctors in general.

General Physician and Mental Cases

More buildings for mental hospitals and more qualified psychiatrists, have been the only hope in the past to meet this emergency. But this is not the answer. Apparently, there never will be enough psychiatrists to do this job in the foreseeable future.[1] The new workable plan would be for doctors in general, to take care of a larger portion of mental cases.

Many cases, first seen by the family doctor, could be successfully treated by him, and thus save the necessity of commitment to a mental hospital.

Of course, doctors in general should have enough training to take care of mental diseases. This means that modern medical schools must squeeze this subject into the already crowded curriculum. Doctors, who feel they need it, should take some special courses in mental diseases. But all doctors, be they surgeons, obstetricians, generalists, or specialists, whether they relish the idea or not, are constantly confronted with psychological and psychiatric problems. Doctors in general should prepare themselves to take a share of mental cases in order to solve, what is probably, our most urgent health problem.

The severe and more involved cases, who do not respond to the psychobolics and loving care, will have no alternative, but the psychiatrist or the mental hospital.

The doctor, with a waiting room full of patients, will find it difficult to give the necessary time to those whose problems require patience and understanding; but the very nature of the doctor's relationship to his patient makes it possible for him alone to offer valuable help. He could, of course, make allowance for the extra time consumed in the fee charged.

Chemical Agents

We are now well into the biochemical or biological era.[2] In this method, the pa-

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tient is given a chemical agent which improves his feelings, behavior and thinking. This era came about by the discovery of reserpine, the first chemical agent, directly effective in treating the mentally ill.

There are some forty odd mental drugs now available. Because I have had more experience with reserpine (Serpasil), and because I have found it safe and effective, and that probably it can be employed by the general practitioner with less trouble or less complication, I have limited this paper to a discussion of reserpine. I have offered a simple, conservative, safe plan, which is designed to enable the general practitioner to begin accepting and treating a larger number of mental cases. Of course, there are other mental drugs which are now being successfully used. If the general practitioner chooses any one of these, he is, of course, free to do so.

In the practical clinical work, most mental patients who are noisy, upset, denuditive, hostile, overactive, destructive, will improve their mood and behavior when given adequate doses of reserpine (Serpasil) for a long enough time. They become serene, polite, happy and cooperative. Then the doctor can get good results from psychotherapy. The psychiatrist, of course, can give first class treatment at this stage. But the generalist, even if his psychotherapy may be unskilled, can achieve very good results. Some patients require a much longer period of treatment than others.

Although most psychiatrists, and many doctors, hold the view that the new mental drugs do not cure the mental disease, we have had a number of patients who were regarded as chronic and hopeless, who have emerged from their foggy mental state, and have been practically restored to good mental health, and who have gone home and taken up their work and activities—apparently they have been cured.

Some patients respond promptly, and may be furloughed in a few months and need not return. These patients, when furloughed, are given a maintenance dosage of one or two mg. or more of reserpine daily for several months, after which if there is no setback, the drug is discontinued.

The 2 ml. ampule of reserpine with 2.5 mg. per ml. is convenient for the parenteral medication, for it enables the doctor to give the exact doses required without having to throw away part of the drug remaining in an ampule.

Side Effects

There is now reserpine (Serpasil) liquid for oral administration which some patients take readily when they refuse to take tablets.

There are few troublesome side effects from reserpine (Serpasil). Slow pulse, low blood pressure are seen with full effect of reserpine. The slow pulse causes no concern, and the blood pressure tends to come down to 100 or 90 mm., or slightly lower; but there it usually remains, without going to a dangerously low point. Reducing or stopping the reserpine for a day or two will restore the patient to former condition. Lassitude or depression is noted in some patients with full reserpine effects. If needed, Ritalin, is given to overcome the depression. The liquid injectable Ritalin is more prompt in action than the tablet. The effective dosage is: 2 cc. t.i.d., or more. The results have been satisfactory. Ritalin is very effective in treating depressed, under-active, negativistic patients. Parkinsonian symptoms are seen in a few patients getting fairly large doses of reserpine. This side effect usually appears early in the course of the treatment. Stopping or reducing the reserpine dosage will result in the disappearance of this complication. It is usually not serious. It is seldom seen in patients who have been getting reserpine for a long time.

Treatment

There are three principal ways to treat mental cases.

1. **Psychotherapy.** Talking with the patient to let him tell the doctor all that is hidden in the depths of his mind. The doctor can guide the patient to a better

plane of thinking. This is the most difficult method for treating the mentally ill, and the longest and most involved; but the doctor can learn to do it. The main point is to show the patient that you are his friend, that he can trust you and can depend on you.

2. **Shock Therapy.** Some patients are benefited by shock treatments; but with the new mental drugs there is far less need for this type of treatment. The very nature of this type of therapy indicates it should be reserved for the psychiatrist who has the facilities and experience for giving such treatment.

3. **Medical Therapy.** Now that we have the new mental drugs, this form of treatment has become more important. In fact, now medical treatment has almost made shock therapy unnecessary. Also, now it has enabled the doctor to reach many mental patients with psychotherapy who, without the new mental drugs, could not be reached, because the patients were incapable of responding to any kind of conversation.

Now that we have the new mental drugs, we can expect the great majority of overactive, noisy, argumentative, hostile, combative patients, to become calm, serene, friendly and polite. If they can have first class psychotherapy, a large number of these can be improved to the point where they are regarded as cured, because they can adjust outside the hospital. The best of our private mental hospitals report a very high percentage of cures in this sense. Even with less skilled psychotherapy, such as doctors in general can give, there are a gratifying number of patients, who can be furloughed and remain at home. Patients who are not too far over forty are more likely to show these satisfactory results.

Results

Of course, mental patients who are taken at the onset are more likely to respond favorably to therapy. However, a small number of patients who are chronic and regressed, and are regarded as hopeless, can gradually emerge and, in time, become so much improved that they can be furloughed and live at home. Such patients may have been in mental hospitals for a period of ten years or longer, who have had many shock treatments, and may have undergone neurosurgery, and who have been secluded for years on the back wards, who are denuditive, untidy, hostile, combative, and seemingly hopeless. For example, we have one case who has been fighting the nurses, and who could not be safely approached, who showed no improvement for twenty-five years, who now is out of seclusion, who goes to her meals, eats in the dining room with other patients, is friendly and cooperative. There are others of the chronic, severe, regressed group, who seemed hopeless, who are now living at home.

Many of our old chronic cases who have been under reserpine, off and on, for more than five years, behave well and are serene and friendly so long as they get their drug, but who relapse in a few weeks or months if their drug is discontinued. Such cases are put on a maintenance program, which means they are getting from 1 or 2 to 4 mg. or more of reserpine by mouth daily, with occasional intramuscular injection of 5 mg. once or twice daily to control episodes of misbehavior or upset.

So it is by these methods our worst wards are greatly improved, less noisy, less fighting, fewer patients secluded. The entire ward has a more serene and happy, friendly atmosphere. The work of nurses and attendants is lightened, and the hospital population is reduced.

Advances in Upper Gastrointestinal Endoscopy*

• The important new instruments and procedures are dealt with.

ROBERT J. McHARDY, M. D.
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New Orleans

THE diagnosis of upper gastrointestinal diseases has been augmented by roentgenologic and endoscopic examination. Although older than roentgenologic procedure, endoscopic examination has not advanced so rapidly. Technical limitations made the early instruments cumbersome, dangerous, and unreliable. With the introduction of the flexible gastroscope by Schindler in 1932, visual examination of the gastric mucosa became practical. Despite known limitations of the procedure, particularly inability to visualize lesions in blind areas, gastroscopy, in trained hands, is clinically valuable. In conjunction with the roentgenographic examination, gastroscopy has been utilized particularly in the differentiation of malignant and benign gastric ulcers, establishing the site of upper gastrointestinal bleeding, assessment of healing ulcers, pre-pyloric ulcer visualization, and evaluation of postoperative gastroenterostomies. The combination of roentgenography and endoscopy increases the diagnostic accuracy of upper gastrointestinal lesions.

Instruments and Procedures

This discussion will primarily deal with the important recent refinements in the instruments and procedures of upper gastrointestinal endoscopy.

Dual esophagoscopy and gastroscopy is now feasible since the introduction of the Eder-Palmer[1] esophagogastroscope. This procedure utilizes a rigid, direct-vision esophagoscope and a flexible gastroscope. The gastroscope is standard with the exception that the diameter is sufficiently small to pass through the 9.5 mm. esophagoscope. Esophagoscopy is first performed and at the conclusion of the examination, the esophagoscope is withdrawn into the upper esophagus. The gastroscope is then introduced through the esophagoscope and gastroscopy performed in the usual manner. This dual procedure reduces the danger of two separate instrumentations. This examination is of particular value in the evaluation of hematemesis.

Benedict,[2] in 1948, introduced the flexible operating gastroscope. The standard gastroscope has a punch biopsy attachment which can be controlled under direct vision. The disadvantages include increased diameter of the instrument and the fact that only a single biopsy can be performed. Multiple biopsies of the gastric mucosa can be obtained with the Tomenius-type of suction biopsy.[3] Unfortunately, during this procedure the stomach is collapsed, thus sacrificing direct vision. Nevertheless, gastric biopsies are augmenting knowledge of gastric pathology with the comparison of microscopic specimens with the gross lesions seen by the endoscopist.

Photography of gastric lesions has been curtailed in the past due to prolonged exposure time and inadequate light source. With the introduction of the electronic flash, in 1956, by Debray and Housset,[4] these disadvantages have been overcome. The Gastroflex has an improved optical system which insures excellent results and can be used with safety to the patient. A 35 mm. camera is mounted at the viewing end of the gastroscope with a shutter speed of 1/25 second and a flash duration

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* Presented at the Eightieth Annual Meeting of the Louisiana State Medical Society, Baton Rouge, May 4, 1960.

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of 1/1000 second. High voltage (150 volts) of the electronic flash is reduced to an instant by a relay system. Kodachromes of gastric lesions as permanent objective records are invaluable. The production of motion pictures through the gastroscope is now in progress.

One of the most intriguing advancements has been the introduction of the Hirschowitz Gastroduodenal Fiberscope.[5] This instrument utilizes a fiber optic system permitting transmission of images through multiple optical glass fibers. The instrument is 38 inches in length, one-half inch in diameter, and completely flexible throughout the entire length. The flexibility of the instrument reduces the danger of perforations and discomfort of passage. With experience, lesions of the pyloric canal, duodenal bulb, and postoperative stomas may be visualized. It is anticipated that with the fiber optic principle lesions of the small intestine may be adequately visualized.

Summary

In conclusion, it may be stated that gastroscopy, although not a routine procedure, is a valuable adjunct in the diagnosis of upper gastrointestinal lesions. Esophagoscopy and gastroscopy may be performed jointly. A histologic diagnosis may be obtained with an adequate gastric biopsy. Color photography and cinegastroscopy will enhance our knowledge of upper gastrointestinal physiology. The use of a fiber optic system in endoscopy has opened new horizons for the endoscopist.

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Drug Charges in Hospitals

With increasing frequency one hears complaints from the public that hospitals are charging exorbitant prices for their services, and, of these, the chief targets seem to be the charges for drugs. When one reviews statistics of drug charges made by general hospitals, he cannot help wondering if the prevailing practices of hospitals in cost accounting and fixing charges are valid and realistic. Certainly, the impressions are gained either that some of the hospitals are not very businesslike in their financial affairs or that they are attempting to use their pharmacies to cover losses in other areas. Neither of these impressions is reassuring to the public.—Robert S. Meyers, M. D., in **The Modern Hospital,** August 1961.

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Editorial

Inter-Professional Code for Physicians and Attorneys

To help smooth the way towards the ends of justice and to promote the public interest the Louisiana State Bar Association and the Louisiana State Medical Society considered together and adopted an Inter-Professional Code for Physicians and Attorneys. This Code is informative, particularly for the physician, and also serves as a guide in regard to what is expected of the physician in connection with a case in court. Recognition of its provisions and adherence to its broad concepts will tend to prevent misunderstandings and antagonisms and as stated in the preamble, "the medical and legal professions share an obligation to serve the individual and society to the best of their ability".

The procedures of law and the processes of courts are a thing apart from the life of the physician but he must recognize that the duty of the physician is the same as that of any other person to respond to judicial process. In addition to the Code there is an Addendum which amplifies and explains many features of the Code which are known to lawyers but are beyond the experience of the average physician. With the Code and the Addendum the physician has valuable guides as to his conduct in these legal matters.

The average physician does not anticipate the need of his appearing in court. The chances are that the physician in his years of practice will be called more than once to testify as a witness as to fact or as an expert. Most do not realize that in two-thirds of all cases going to trial the evidence given by the physician is a necessary part of the court record and may be decisive.

It is advised in the Code that preparations for trial be made carefully, that the physician should furnish adequate medical reports and make them available promptly but that the physician should never attempt to be an advocate and should realize that his report is primarily intended to enlighten all parties on the medical facts in the case. A conference before trial is regarded as important. It is also stated that the physician should not take offense at being subpoenaed but that the

attorney should arrange prior notification. Advice as to arrangements for appearances in court are as reasonable as the business of the courts would allow and recognize that his attendance in court should take into consideration the professional demands on the physician's time. He, however, should be prompt and should recognize that an "emergency" can never be a matter of mere convenience to the physician.

During the procedures in court the attorney and the medical witness each should conduct himself with dignity, and respect the position of the other. Mutual courtesy and consideration are highly desirable.

It is stressed again that the function of the physician should be considered as a provider of facts. His statements should be complete and clear as circumstances permit. He should, however, never be an advocate nor seek unfairly to impress or prejudice the court.

As a corollary, the attorney should never unfairly abuse or harass the physician. It is improper for an attorney to seek to color the professional opinion of the physician.

When there are conflicts between the testimony of two or more physicians with reference to the same case, a physician can and should explain that Medicine is as much an art as it is a science and that judgment values are not exact but at best fall within substantial ranges.

The medical witness should remember that his testimony is not intended to impress or edify but to explain. The opinion of the witness is ordinarily not admissible in court. The usual witness is to testify to the facts within his own knowledge. The expert witness is called upon to give opinion evidence. The physician who is called as a witness may be one or other or both. The matter has to be cleared in any individual case with his lawyer and with the court. It is generally recognized that every physician is relatively "expert" in the field of medical testimony. It has been observed that a physician called as a witness as to fact can be forced to qualify himself as an expert and testify as one even though no provision exists for his being paid the fee of an expert.

Medical expert witnesses are said to manifest a peculiar psychology and may appear to exhibit a touch of infallibility. They have learned to expect to have their opinions respectfully listened to, unquestionably accepted, and are unaccustomed to contradiction. It is obvious as to why they may be considered as opinionated. Such medical experts are to be admonished, to be fair and impartial, simple and direct and should use terms understandable to the jury and be careful to retain complete self-control under possibly irritating questioning. The expert witness should prepare himself well. On the witness stand he should be serious and unassuming. By his attitude he should suggest that he knows with his special knowledge that he is aiding an intelligent jury to understand a technical problem so that they may be in a position to render a just verdict. "All this being true, the content of a medical expert witness' opinion may be only a little more important than the manner in which he delivers it—than the impression he makes on the jury".[1]

The matter of fees for the medical witness is discussed at some length and clarity. Under no condition should the physician agree to a contingent fee. Any other practice would lead to the charge that the physician-witness had an interest for being partial in his testimony. The payment of a physician's fees for his examination, report, research, study, conferences and testimony in connection with litigation is always an obligation to the patient or the party to a court action. It is self-evident that a physician's integrity and judgment are among his most precious assets, in that neither should ever be "purchased". Any physician may be called as a witness as to fact or as an expert.

It would greatly serve the needs of the patient, the understanding of the medical profession and the public interest, if each physician made himself familiar with the

Inter-Professional Code for Physicians and Attorneys and also with the Addendum. In such a manner he can facilitate his own efforts and exhibit a conduct creditable to himself and to the profession.

[1] Regan, Louis J.: Doctor and Patient and the Law, 3d Ed., p. 193, C. V. Mosby Company, St. Louis, 1956.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

PARTIAL REPORT ON ACTIONS HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION 111th ANNUAL MEETING JUNE 24-28, 1962, CHICAGO

Health care for the aged, medical discipline, composition of the AMA Board of Trustees, a study of the American Board of Abdominal Surgery, relations with the American College of Surgeons and voluntary health insurance were among the major subjects acted upon by the House of Delegates at the American Medical Association's 111th Annual Meeting held June 24-28 in Chicago.

Dr. Edward R. Annis of Miami, Florida, chairman of the AMA National Speakers Bureau and well known spokesman in the campaign against the King-Anderson Bill, was chosen president-elect of the association. Dr. Annis will become president at the June, 1963 annual meeting in Atlantic City, succeeding Dr. George M. Fister of Ogden, Utah, who assumed office at this meeting.

Final registration figures at the meeting reached a total of 42,643, including 14,092 physicians.

Health Care for the Aged

The House received 17 resolutions expressing full support of the Kerr-Mills program and firm opposition to the King-Anderson type of legislation. In reaffirming the position of active opposition to the King-Anderson Bill, the House cited the following reasons:

"1) the lack of need for such a plan.

"2) that it would provide inadequate care for all aged rather than complete care for those who need help.

"3) the fact that inherent in the use of the Social Security mechanism are governmental controls of medical practice which would increase with the expansion of the program.

"4) deterioration of the quality of medical care not only for the aged but for the population as a whole."

In reaffirming strong support for the Kerr-Mills Act, the House declared that "the Kerr-Mills method should be given a fair and reasonable chance to meet the need and thus remove the demand for further Federal legislation."

It urged that in states where existing programs indicate a need for a Kerr-Mills implementing law, each state organization should actively sponsor and promote with other responsible citizens the enactment of such a law. It also urged the state organizations to "work actively with other responsible citizens in reviewing the functions of the law, evaluating its effectiveness and aggressively supporting improvements in programs to aid those aged who need help so as to achieve the provision of quality medical care and service."

The House took no action on one resolution which called for non-participation in the implementation of the King-Anderson Bill, but it urged individual physicians to give particular consideration to the following sections of the Principles of Medical Ethics:

"Section 1.—The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

"Section 5.—A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

"Section 6.—A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care."

Commenting on the Association's fight against the King-Anderson Bill, Dr. Leonard W. Larson,

retiring president, told the opening session of the House that "this great struggle has been testing again whether the science and art of medicine will be permitted to grow and flourish in freedom, or whether progress in medicine will be stunted and shriveled by the excesses of government control."

He declared that the steadfast refusal of the AMA to compromise on basic principles "has been a source of strength for us and our friends." Dr. Larson expressed confidence in ultimate victory, but he added that victory will impose a solemn obligation of responsible leadership for all physicians.

Also commenting on the question of compromise, Dr. Fister in his inaugural address said "we will not compromise with those who regard medical care problems as simply playthings in the game of politics—gimmicks to attract the votes of the gullible."

Medical Discipline

To implement one of the major recommendations made by the Medical Disciplinary Committee at the June, 1961 meeting in New York, the House approved a change in the Bylaws under which a proposed Section 1 (B) of Chapter IV will now read:

"In addition to such disciplinary action as may be taken under the Constitution and Bylaws of the component society and constituent association to which the Member belongs, or when a state medical association to which a Member belongs requests the AMA to take disciplinary action, or when at the request of the American Medical Association the state association to which the member belongs consents to disciplinary proceedings by AMA, the Judicial Council, after due notice and hearing, may censure him, or may suspend or expel any member of the American Medical Association from AMA membership only for an infraction of the Constitution or these Bylaws or for a violation of the Principles of Medical Ethics."

AMA Board of Trustees

The House approved a report of the Ad Hoc Committee on the Board of Trustees which recommended that the size of the Board be increased from 11 members to 15 members. This will be accomplished by adding three elected members and by including the immediate past president of the Association for a one-year term. The House also accepted a committee recommendation that set the term of office for elected Board members at three years and limited the number of terms to three, for a maximum total of nine years service. To implement the House action, the Council on Constitution and Bylaws submitted changes in the Constitution and Bylaws for consideration at the 1962 Clinical Meeting.

American Board of Abdominal Surgery

A study report from the Council on Medical Education and Hospitals, recommending that recognition should not be granted to the American Board of Abdominal Surgery as a specialty board, was approved by the House. In accepting the Council report, the House also declared its disapproval in principle of establishing specialties which are based largely or wholly on an arbitrarily defined anatomical region of the body.

The study, which was carried out under instructions from the House of Delegates at the 1961 Clinical Meeting, concluded that the present contribution of the American Board of Abdominal Surgery to the advancement of surgery and the betterment of public health is inadequate in many important respects. It also concluded that the American Board of Abdominal Surgery does not offer significant potential for the advancement of surgery and the betterment of public health.

American College of Surgeons

In considering a Board report and four resolutions involving surgical assistants and relations between the AMA and the American College of Surgeons, the House declared that the adoption and interpretation of the Principles of Medical Ethics is the prerogative and duty of the American Medical Association. It also restated the Association's June, 1961 policy statement in the following manner:

"(1) Each member of the AMA is expected to observe the Principles of Medical Ethics in every aspect of his professional practice.

"(2) Each doctor engaged in the care of the patient is entitled to compensation commensurate with the value of the services he has personally rendered.

"(3) No doctor should bill or be paid for a service which he does not perform; mere referral does not constitute a professional service for which a professional charge should be made or for which a fee may be ethically paid or received.

"(4) When services are rendered by more than one physician, each physician should submit his own bill to the patient and be compensated separately whenever possible.

"(5) It is ethically permissible in certain circumstances, however, for a surgeon to engage other physicians to assist him in the performance of a surgical procedure and to pay a reasonable amount for such assistance. This principle applies whether or not an assisting physician is the referring doctor."

Voluntary Health Insurance

In accepting a Council on Medical Service report on the utilization of state and federal tax funds to provide voluntary prepayment health insurance protection to assist the aged in meeting the costs of health care services, the House approved the following policy statement:

"1. The need for application of the prepayment or insurance principle to protect our people

against the costs of medical care is fully recognized and applies to all ages rather than to the aged alone.

"2. Persons financially able to prepay their own expenses are expected to do so and must be encouraged rather than compelled to do so.

"3. Persons financially unable to prepay adequately their expenses may properly be assisted to the degree necessary by their families, their communities, their states, and if these fail, by the Federal Government—but only in conjunction with other levels of government.

"4. The prepayment system should be devoid of governmental controls.

"5. Dignity and self-sufficiency for the individual should be upheld.

"6. The protection offered must be reasonably comprehensive rather than token in character."

The House recommended that the Board of Trustees and the Council on Medical Service explore all possibilities, using these principles as a basis.

Miscellaneous Actions

In considering reports and resolutions on a wide variety of subjects, the House also:

Learned that the Board of Trustees has instructed the Council on Drugs to conduct a study on the relationship between **tobacco and disease.**

Disapproved a suggestion that the Council on Medical Education and Hospitals be replaced by **two separate councils** on undergraduate and graduate medical education.

Referred to the Board of Trustees a proposal that at least six members of the **Council on Medical Education and Hospitals** shall be engaged primarily in the private practice of medicine in hospitals without a medical school affiliation and that no more than four members may be salaried personnel of a medical school or university.

Approved a resolution that **honorariums** be provided for the elected officers of the Association in amounts to be determined by the Board of Trustees.

Adopted an AMA Statement of Principles on **Mental Health** and urged all constituent associations to lend active support to the First National Congress for Mental Illness and Health, to be held in Chicago in October.

Endorsed a resolution on **employment of the handicapped,** stating that each individual candidate for employment should be evaluated in light of his ability to perform useful work.

Approved a Guide to the Organization and Operation of **Airport Medical Services** submitted by the Council on Occupational Health.

Endorsed the joint statement on **narcotic addiction** by the AMA and the National Research Council of the National Academy of Sciences.

Urged automobile manufacturers to make **seat belts,** approved by the Society of Automobile Engineers, standard equipment on all automobiles.

Approved a recommendation that **AMA meetings** be scheduled as folows: Annual Meetings—1966, Chicago; 1967, Atlantic City, and 1968, San Francisco; and Clinical Meetings—1965, Philadelphia, and 1966, Las Vegas.

Recommended that the Council on Medical Education and Hospitals conduct a study of **specialty residencies.**

Reaffirmed its opposition to **compulsory coverage of physicians** under the Social Security Act, after receiving 11 resolutions opposing coverage and only two favoring the inclusion of physicians.

Accepted the report of the **Committee on Communications** as information, and, in considering the committee recommendations, suggested that the Executive Vice President present a report of Association activities to the House at each meeting.

Opening Session

At the Monday morning session, the AMA presented a special citation to Jackie Cooper, star of television, stage and movies, for his portrayal of a Navy doctor in the "Hennessey" television program. The 1962 Joseph Goldberger Award in clinical nutrition was presented to Dr. Edwards Albert Park of Baltimore for his investigations of rickets and scurvy in children. Dr. Larson received a plaque for his work on the medical advisory board of the Sears-Roebuck Foundation. The American Medical Association was given awards of appreciation from the Cuban Medical Association in Exile and the Girl Scouts of America.

Inaugural Ceremony

Dr. Fister, in his inaugural address, declared that "we will cooperate, to our very utmost, with government officials, legislators and all Americans who are sincerely interested in finding sound, practical solutions to medical care problems—solutions which include both respect for medical standards and a respect for the taxpayers." The Distinguished Service Award was presented to Dr. Russell L. Cecil, and Donald D. Van Slyke, Ph.D., research chemist at the Brookhaven National Laboratories, received the first AMA Scientific Achievement Award honoring outstanding contributions to Medicine by nonphysician scientists. Mrs. George Papanicolaou was given a special award honoring service of her late husband to mankind.

Wednesday Session

Dr. Fister, in his Wednesday address, assured the House of Delegates, all AMA members and the citizens of this country that "during the next year there will be no letup in our campaign to preserve the high standards of our voluntary, free choice, medical care system." He said that no organization, especially one which thrives on challenge and opportunity to serve the public, can be static.

Election of Officers

In addition to Dr. Annis, the new president-elect, the following officers were named at the closing session on Thursday:

Dr. J. P. Culpepper, Jr., Hattiesburg, Miss., vice president; Dr. Norman A. Welsh, Boston, re-elected speaker of the House, and Dr. Milford O. Rouse, Dallas, Tex., re-elected vice speaker.

Dr. Charles L. Hudson, Cleveland, Ohio, and Dr. Wesley W. Hall, Reno, Nev., were re-elected to five-year terms on the Board of Trustees. Dr. Elmer G. Shelley, North East, Pa., was renamed to the Judicial Council.

Re-elected to the Council on Medical Education and Hospitals were Dr. Warde B. Allan, Baltimore, and Dr. W. Clarke Wescoe, Lawrence, Kansas.

Dr. George W. Slagle, Battle Creek, Mich., was elected to the Council on Medical Service, succeeding Dr. Robert L. Novy, Detroit, who was ineligible for re-election.

For the Council on Constitution and Bylaws, Dr. Walter E. Bornemeier, Chicago, was re-elected, and Dr. James Monroe Kolb, Sr., Clarksville, Ark., was named to fill the unexpired term of the late Dr. Walter E. Vest, Huntington, W. Va.

AMA HOUSE OF DELEGATES

June 27, 1962

Remarks of Don Dunham, Science Editor
Cleveland Press, Cleveland, Ohio

Mr. President, Mr. Speaker and members of the House of Delegates of the American Medical Association:

I am not unmindful of the great and unusual honor accorded to me as a layman in being invited to address this Assembly.

It was only a few short years ago—especially in 1952—that I and many of you walked through our large contagious disease hospitals and saw the wards and even the halls jammed with Iron Lungs. In them were the tragic forms of small children and young parents, victims of the dreaded polio.

In 1955 came the dramatic word from Ann Arbor: "Salk polio vaccine is both safe and effective." People uttered prayers of thanksgiving. Our nation honored Dr. Salk. Polio was on the run, but not yet defeated.

In February, 1957, the Cleveland Academy of Medicine gave two free Salk shots to every pupil in our public, parochial or private schools.

Then came Ohio's Dr. Albert B. Sabin with an oral polio vaccine made from attenuated live viruses. This did its protective work not only in the central nervous system but also in the gastro-intestinal tract. It gave promise of preventing polio and eliminating carriers.

These are two great scientists and they are two very good vaccines. There is honor enough for both men.

Because work with live viruses is difficult at best, dangerous unless done under the most rigid conditions, our government did not approve all three types of Sabin vaccine until last March. In the meantime, it underwent tremendous tests overseas, especially in Russia and other Iron Curtain countries. It stopped polio epidemics dead in Israel, Japan and South America. More than 250 million persons have taken it.

Several cities in this country began use of the two released types of Sabin in communitywide programs. Dr. Sabin had said his vaccines should be used by 75 per cent or 80 per cent of community populations to knock out polio in a given community. Last June in New York this House of Delegates gave similar advice.

Cincinnati, under the aegis of Dr. Sabin, immunized all of its school children and some of its adults two years ago. Early this spring, Tucson and Phoenix, Ariz., put on notable polio campaigns. Youngstown and some smaller Ohio communities followed. Omaha and other cities have started and Los Angeles is planning a gigantic campaign for fall.

Many months before Type Three Sabin was officially released by the government, my newspaper, The Cleveland Press, had notified the Academy of Medicine of Cleveland that we were ready to give them our utmost support if and when they decided to enter a community-wide Sabin program. They set up committees. Their program was well planned. Dr. Sabin was speaking in Cleveland the first of the next week and he spent two days with leaders of the Academy and public health officials, giving them advice based on millions of immunizations.

First idea was to wait until fall. But the possibility of polio cases this summer that might be prevented brought the decision to move as soon as vaccine could be obtained. All the makers were contacted. A contract was signed with Pfizer, who moved in extra men to help and advise. Sabin Oral Sundays were on the road.

It was decided to give each of the three types of Sabin on two successive Sundays, four weeks apart. The first SOS date was May 27th. Everyone from six weeks to 116 years was invited from noon to 6 p.m. The Academy had $600 in its treasury. But two local foundation grants were obtained totaling $35,000 to get the rocket fuel to rev up the engines.

Cost of the program, including about $600,000 for vaccine alone, was to come from donations of 25 cents or more from those who could afford to pay. Nobody was to be refused because he could not pay. The first two Sundays average donation was 24.8 cents. It is going to pay its way. Ninety clinics were set up, mostly in schools. Two were added in the heart of the city the second Sunday.

A physician was director of each clinic. He was supported by registered nurses, PTA mem-

bers, Red Cross, Boy Scouts, Girl Scouts, service groups, police. Toughest assignment went to the pharmacists who had to dilute and mix the vaccine and then tediously put three drops of it on tens of thousands of cubes of sugar.

The program was magnificently planned and carried out, even though many clinics ran out of vaccine briefly that first day, the crowds were so overwhelming.

May 27th was a hot day. But the people waited patiently in lines because they moved rapidly. There was a festive, holiday spirit in the air. It was something like church and yet something like the Indians sweeping a four-game series from the Yankees as they did a few days later. Everyone was orderly, friendly and happy. They were taking part in a great cause.

That first day, 915,000 persons got their Sabin vaccine. The second Sunday carried the total to 1,530,000. This was 94 per cent of the county population. I submit that this was the most fantastic and amazing response any metropolitan city in America ever saw. Everyone had helped. It proves that an alert citizenry, given the facts, will vigorously support public health measures. The program had the greatest publicity and promotion campaign—for free—in the city's history. We hope to see no more little bodies, twisted by polio, no more stalwart young fathers in wheelchairs.

One would expect pediatricians, general practitioners and perhaps even a few internists to participate in such a campaign. But a great many of our leading surgeons were on the front lines, directing clinics. Some even asked to repeat. And there were directors of radiology and of anesthesiology and obstetricians.

As a leading surgeon said at 7:30 that night after he had brought his supplies back to the warehouse downtown, a 15-mile trip: "Today I was damned proud to be a doctor and a member of the Cleveland Academy of Medicine."

I believe this was without doubt the greatest outpouring of community consciousness in American history. It could not have got off the ground without the careful planning and wholehearted cooperation of the doctors. To me this was one of American Medicine's finest hours. It also was the flowering of the community responsibility of a great city and its people. I bring the heartfelt thanks of the people of Cleveland along with my own for our doctors' courageous, humane and far-sighted program and I express this to you, their parent organization. Thank you.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

CLINICAL SYMPOSIUM

September 20-22, 1962

The University of Texas Postgraduate School of Medicine will sponsor a Clinical Symposium on "The Practical Treatment of Hypertension," September 20, 21 and 22, 1962. The Symposium will be held in the Auditorium of The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston, Texas.

Guest speakers will include:

Dr. James Conway, University of Michigan Medical Center, Ann Arbor, Michigan. Current Concepts and Theories Regarding the Etiology of Essential Hypertension and its Natural History.

Dr. Arthur Grollman, The University of Texas Southwestern Medical School, Dallas, Texas. Metabolic Observations in Essential Hyperten-

sion and The Role of Associated Vascular Disease and Its Influence on Therapeutic Considerations.

Dr. W. R. Wilson, Johns Hopkins University School of Medicine, Baltimore, Maryland. The Effects of Newer Hypotensive Drugs on the Hemodynamics of Hypertension.

Dr. Walter Kirkendall, University of Iowa School of Medicine, Iowa City, Iowa. Indications for Treatment, Present Day Drug Therapy of Essential Hypertension and Changes Observed in the Fundi of Hypertensive Patients During Treatment and in the Absence of Treatment.

Dr. Leon Goldberg, Emory University, Atlanta, Georgia. Alpha-methyl Dopa and Guanethidine as Therapeutic Agents in the Treatment of Essential Hypertension and Pheochromocytoma, Its Diagnosis and Treatment.

Dr. Ray F. Gifford, Cleveland Clinic, Cleveland, Ohio. The Diagnosis and Treatment of Renovascular Hypertension and The Treatment of Hypertensive Emergencies.

Dr. Reginald Smithwick, Boston University, Massachusetts Memorial Hospitals Medical Center, Boston, Massachusetts. Sympathectomy, Adrenalectomy and Nephrectomy in the Treatment of Hypertension.

For further information write: Office of the Dean, The University of Texas Postgraduate School of Medicine, 102 Jesse Jones Library Building, Texas Medical Center, Houston 25, Texas.

AMERICAN THORACIC SOCIETY OFFERS RESEARCH GRANTS

The American Thoracic Society, medical section of the National Tuberculosis Association, offers grants for research in respiratory diseases, including tuberculosis. Grants are awarded for medical and social research in these fields. Deadline for applications for the grant year beginning July 1, 1963 is DECEMBER 15, 1962. Full information and forms may be obtained from Division of Research & Statistics, American Thoracic Society, 1790 Broadway, New York 19, New York.

DRUG ASSOCIATION HEAD DECRIES "WASHINGTONITIS"

Dr. Austin Smith, President of the Pharmaceutical Manufacturers Association, lashed out recently at excessive governmental paternalism and spending, which he said is eroding our freedom, dignity and self-reliance.

In a speech to the Idaho State Medical Association at Sun Valley, Idaho, Dr. Smith warned of "The New Disease Known as Washingtonitis" which is creeping over the nation's capital, paralyzing individual initiative, fostering a "let-the-government-do-it" attitude, and leading to ever-growing bureaucracy, public debt, and governmental interference.

"We have seen emerge a belief that business in general is irresponsible, that the professions and those who are scientifically trained are naive, and that only the paternalism of growing armies of government agencies can lead us safely along the path with one hand while with the other hand they extract cash from our pockets to pay for the expedition," he said.

In a place like Washington, Dr. Smith reminded, it is easy for some people to believe that the world revolves around this city and that the people should work for the government. "My only plea," he told the Idaho doctors, "is to urge you to recognize that such a disease can become infectious and that unless you practice some appropriate preventive medicine a nation can become infected."

Dr. Smith surmised that "our antagonists elsewhere in the world must watch with glee how we are trying to put on the shoes of corporate enterprise with academic shoe horns."

Dr. Smith observed that members of the health professions are sometimes accused of being selfishly against change, particularly in the medical field.

"Frankly," he said, "I think this often is a most unkind accusation, because I do not know of any group more eager to see change come about. We are spending our lives trying to bring about change; in fact in trying to put ourselves out of business. . . . We only ask that the proposed change be based on fact, not theory; that it be given a revealing trial before it is nationally adopted. We want progress by evolution, not regression through revolution."

OAK RIDGE INSTITUTE OF NUCLEAR STUDIES ANNOUNCES SPECIAL COURSES

The Oak Ridge Institute of Nuclear Studies, which has been active for some fifteen years in the training of scientists in the use of radioisotopes, is announcing a special course to be presented this September.

The course in the "Instrumental and Chemical Techniques of Activation Analysis" will be presented by the ORINS Special Training Division, September 24-October 5.

This special course is designed for the scientist or engineer who has already done some work involving radioisotope techniques and is now interested in applications involving neutron-activation analysis. It will include both lecture and laboratory work covering such pertinent topics as gamma spectroscopy, multichannel analyzers, neutron sources, computer applications, and radiochemical separations.

Prominently featured in the course will be the Special Training Division's new neutron generator—a source capable of producing up to 10^{10} neutrons per second. The device will permit experiments in flux determination, the use of fast

or slow neutrons, and analyses of the spectra of extremely short-lived radioisotopes.

Under its contract with the U. S. Atomic Energy Commission, the Special Training Division of ORINS—a nonprofit educational corporation of 38 universities—has provided radioisotope-technique training to more than 4800 scientists from all 50 states and 58 foreign countries.

Further information about the special course in activation analysis can be obtained by writing Ralph T. Overman, Chairman, Special Training Division, Oak Ridge Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tennessee.

FIFTH ANNUAL MEDICAL PROGRESS ASSEMBLY BIRMINGHAM ACADEMY OF MEDICINE

Dr. Robert G. Heath, Professor and Chairman, Department of Psychiatry and Neurology, and Dr. Oscar Creech, Jr., Professor and Chairman of the Department of Surgery, Tulane University School of Medicine, will be featured speakers at the 5th Annual Medical Progress Assembly, to be held in Birmingham September 30, October 1-2, 1962.

The Medical Progress Assembly is sponsored annually by the Birmingham Academy of Medicine, an organization of some 200 Birmingham medical specialists, internists and general practitioners, and attracts physicians from over Alabama, as well as Georgia, Tennessee, Florida, Mississippi, Louisiana and other Southern states.

Physicians from other medical schools in the South who will appear on the program of the 5th Annual Medical Progress Assembly are: Drs. Nathan A. Womack, Professor of Surgery and Head of the Department, University of North Carolina School of Medicine; Carleton B. Chapman, Professor of Medicine, University of Texas Southwestern Medical School; Vincent P. Collins, Professor of Radiology and Chairman of the Department, Baylor University College of Medicine, and Carl V. Moore, Busch Professor of Medicine and Head of the Department, Washington University.

Also, Drs. Robert W. Kistner, Harvard University; Hugh B. Lynn, Mayo Clinic; Robert H. Williams, University of Washington, Seattle; Harry E. Bacon, Temple University; Henry Beecher, Harvard University; Bentley P. Colcock, Lahey Clinic, Boston; Jerome W. Conn, University of Michigan; Luke Gillespie, Lying-In Hospital, Boston, and Franz J. Ingelfinger, Boston University.

Dr. Stanley Graham, Birmingham, Academy president, is also general chairman of the 5th Annual Medical Progress Assembly. In addition to the scientific sessions, leading pharmaceutical houses and medical equipment firms will hold technical exhibits.

Dr. Graham announced that those who expected to arrive before Sunday registration begins could procure tickets to the Auburn-Tennessee football game, scheduled for September 29, by sending in reservation requests in advance.

CLINICAL CENTER STUDY OF CHRONIC MYELOGENOUS LEUKEMIA

The cooperation of physicians is requested in a study of chronic myelogenous leukemia being conducted by the Chemotherapy Service of the National Cancer Institute at the Clinical Center, National Institutes of Health, Bethesda, Maryland.

Referrals of patients with chronic myelogenous leukemia are needed. Particularly needed are those in the 20 to 40 year age group with high white blood cell counts and platelet counts, for studies of newer chemotherapeutic agents and as a source of white cells and platelets for **in vitro** and **in vivo** study.

Physicians who wish to have their patients considered for the study may write or telephone: Dr. Paul P. Carbone, Chemotherapy Service, Medicine Branch, National Cancer Institute, Bethesda 14, Maryland, Telephone: 496-4251.

BOOK REVIEWS

Problems in Surgery; by Frank Glenn and C. E. Wantz, Jr., Mosby, 1961. 512 p. $16.50.

This 500 page volume consists of a series of case presentations with discussions taken from Grand Rounds on the Surgical Service of Dr. Frank Glenn at the New York Hospital, Cornell Medical Center. The book is edited by George E. Wantz, Jr., M. D. Participating in the discussions are members from the departments of Anesthesia, Medicine, Pathology, Pediatrics, Radiology and Surgery, with occasional contributions from one or another distinguished visitor who may have been present. Dr. Glenn moderates each discussion and in general decides upon the final plan of therapy for each case. This is followed by a few lines devoted to the outcome and concludes the account. In some instances the outcome reports a follow-up extending for one or more years.

As stated in the foreword by Dr. Glenn "at

these Grand Rounds are presented cases illustrating special or recurrent problems in diagnosis or treatment, general principles of surgical management, methods of preoperative and postoperative care, and the relationships which exist among surgery and the other basic and clinical disciplines; nor are complications and failures overlooked from meticulously honest and thorough consideration of these much may be learned both by the novice and the veteran."

One hundred and fifty two so-called problem cases are considered in all. These are broken down into the following groups: pulmonary surgery, 10 cases; cardiac surgery, 11 cases; vascular surgery, 10 cases; alimentary tract surgery, 35 cases; surgery of liver, biliary tract and spleen, 11 cases; urologic surgery, 14 cases; neurosurgery, 10 cases; endocrine gland surgery, 10 cases; plastic surgery, 8 cases; fractures and dislocations, 14 cases; orthopedic surgery, 10 cases; and miscellaneous (hypophysectomy, breast carcinoma, hernia, burn, pilonidal sinus, eye, ear, nose and throat) 9 cases. Practically every case is illustrated with one or more x-ray reproductions; several cases have photographs or diagrams also. Two or three well-chosen, up-to-date, pertinent references are listed at the end of each report for those interested in further information on the subject.

The book is easy to read as one would expect being recorded conversations. Each account is short, another attractive feature, with only two or three pages devoted to each case, yet the material is clearly presented and includes considerable factual information. One can read through a case in a matter of minutes, which includes obtaining a picture of the problem, hearing discussion, learning what decision was made, and observing the outcome.

The book is well indexed and could be used for reference when a similar or related problem is encountered in the reader's practice; or it can be used intermittently to spend a few spare minutes reading over an interesting case of one type or another.

A criticism might be the high cost of the volume, $16.50, and one might justifiably say that such a book consisting of short pieces of light or entertaining reading ought to be less expensive. Whether or not one feels it is worth the price is, it seems, a matter of personal preference. The high cost, though, pobably will decrease sales.

A minor criticism might be occasional difficulty in interpreting the x-ray film reproductions, which in some cases reflect the inherent difficulty in reproducing x-ray films, but which could at times be remedied by more liberal use of arrows. Parenthetically, it seems unnatural to express in conversation, a patient's temperature in Centograde rather than Fahrenheit, and to indicate fluid volume in milimeters (ml) rather than cubic centimeters (cc) as is the common practice. Such purism though is not as apparent in other accounts where only two dimensions are given for a mass instead of three.

One may take issue with a numher of statements made such as: "many surgeons perform antecolic rather than retrocolic gastroenterostomies regardless of the anatomic or physiologic merits of each, because the former, should it develop a gastrojejunocolic fistula, is easier to correct;" but these remarks represent the opinion of the individual making them, and such provocative statements stimulate our thoughts and discussions.

Several typographical-type errors are noted, inevitable with mass production, as one small "calculi," and performing renal arteriograms by threading a catheter up the femoral "vein."

It is evident though in reading the many comments of Dr. Glenn, that he abides by his statement, made in the foreword, that "the welfare of the patient is always paramount in importance;" and this is the attitude of the members of his staff, as shown in the discussions. Therefore, the decisions reached, regarding therapy for each of these surgical cases, represent a considered opinion of what is best for the patient. Knowledge of this too can be of use to the reader in his practice.

The book is recommended to surgeons as interesting and informative.

Oscar Creech, Jr. M. D.

Disturbances of Heart Rate, Rhythm, and Conduction; by Eliot Corday and Daniel W. Irving. W. B. Saunders Co., 1961, 357 p. $8.50.

This book is written for medical students and clinicians. Its purpose is to explain the physiologic foundation for the comprehension of disturbances of heart rate, rhythm and conduction. Visual aids are used throughout to simplify the pathophysiology of the arrhythmias. The anatomy and nerve supply are well illustrated

The four chapters describing the arrhythmias are carefully diagrammed, but there is some repetition. A later chapter on this subject seems misplaced. The section on conduction disturbances is simple and well defined. A good deal of useful information and treatment is contained therein. There is a brief, but interesting chapter on the Wolff-Parkinson-White Syndrome.

The discussion of cardiac arrest emphasizes the necessity for a printed plan of action. This should be revised, however, as new drug information becomes available. The chapter on the bedside diagnosis of cardiac arrhythmias and conduction defects is well coordinated. Stress is placed on heart sounds, jugular pulse waves, exercise and atropine in arriving at a diagnosis. Electrolyte disturbances and their correction are given ample space and discussion. However, more

detail is needed in the chapter on enzyme elevations and what other factors may cause variation.

The remainder of the book deals with the treatment of cardiac arrhythmias and conduction defects. The listing of newer drugs and their method of administration is a ready reference for both clinician and medical student.

In summary, the reviewer feels that this book offers a fresh approach to a much discussed subject.

ALLEN M. GOLDMAN, M. D.

Medical Genetics 1958-1960: An Annotated Review; by Victor A. McKusick, C. V. Mosby, 1961, 534 pages. Price $14.50.

This book consists of an indexed compilation of reviews of the medical genetics literature for the years 1958, 1959, and 1960 previously published separately in the *Journal of Chronic Diseases.* Aided by the participation of several contributors, the author proposes to provide "a partial substitute for a full textbook of medical genetics" to "supplement the available textbooks in the fields of general genetics and human genetics."

The 1958 review is organized into twenty-three sections beginning with new books, journals, symposia and congresses, followed by several general categories including methods, biochemical genetics and congenital malformations, and concluded by fifteen organ system divisions. The addition of a section entitled "Cytogenetics in Man" to the 1959 and 1960 reviews provides a particularly useful adjunct to standard genetics and medical texts, many of which are out of date because of the recent rapid advancements in human chromosomal analysis as applied to intersex problems, congenital malformations, and neoplasia. A single subject index encompasses all three reviews by paragraph numbers, which also appear at the end of each author-alphabetized reference.

Although by nature less readily readable than narrative texts, this volume provides the major content, critically appraised, of important recent contributions to medical genetics. It thereby provides a succinct summary of the genetic aspects of human disease and a ready access to the recent pertinent literature which should be useful to both clinician and geneticist as a source of reference.

JOHN F. JACKSON, M. D.

Pathologic Physiology; by Wm. A. Sodeman, Saunders, 3d, 1961, 1182 p. $15.00.

The medical student and physician will find a great deal of useful clinical physiology described in *Pathologic Physiology.* The individual topics of the book are presented more extensively in text books of medical subspecialties such as Cardiology, Endocrinology and Gastroenterology. However, this book is written to summarize old and recent concepts for the physician practicing general medicine. The information varies greatly in content, preciseness and value from one chapter to another. The differences are largely a reflection of the amount of established data available and the usefulness of this data for clinical application.

In general all 31 chapters are well written but a few have information worthy of particular comment. Cytogenic studies and extensive geneologic analyses have added a great deal to the understanding of heritable disease and "chromosomal accidents". The best and most recent data (including some reports from 1960) are clearly summarized and illustrated in the chapter dealing with genetics and disease. A lucid review of current Endocrinology is presented in a subsequent chapter and is supplemented by many good diagrams representing the complex inter-relationships of the endocrine glands.

The editor, Dr. W. A. Sodeman, reviews the hemodynamics of blood vessels in a very readable and informative manner; this chapter should be read by every medical student because of the useful and comprehensive information concerning intravascular blood pressures and flows in health and disease. The next chapter is similarly extremely vital for understanding coronary circulation, cardiac muscular physiology, and the many aspects of the cardiac cycle. The discussion of renal physiology explains the use of several, simple basic studies (excretion rates by the PSP test, clearance tests, water reabsorption tests and quantitative measurements of urinary protein and sediment) which should be understood by anyone practicing medicine. Studies of pulmonary air flow have been refined to allow detection of quite moderate but clinically significant alterations of pulmonary physiology. The increasing scope of preventive and corrective therapy in chronic respiratory illness through employment of these tests and the instruments of the pulmonary physiologist makes the chapter on pulmonary function very important in the practice of medicine currently. Finally the sections dealing with physiology of the liver, gall bladder and pancreas provide valuable factual information which also can be applied directly to the practice of medicine.

This composite of clinical physiology will provide a very excellent source for the person who is searching for a book with the best and the most reliable information available in practical medical physiology. It complements the classical basic textbooks of clinical medicine by extensive discussions of physiologic processes which require the monumental total of 1100 pages for thorough discussion at even the very basic level.

ROBERT D. SPARKS, M. D.

Preventive Medicine in World War II. Communicable Diseases Transmitted Through Contact or by Unknown Means, E. C. Hoff, Editor. Vol. V, Medical Department, U. S. Army, Washington, D. C., 530 pp., 74 figs., 55 tables, 12 charts, 4 maps, appendices A-D. 1960. $5.75.

This volume has been preceded in the Preventive Medicine Series by three others, viz., Environmental Hygiene, Personal Health Measures and Immunization, and Communicable Disease Transmitted Chiefly Through Respiratory and Alimentary Tracts, and is to be followed by one on Arthropod-borne Diseases.

Following a Foreword by Surgeon General Leonard D. Heaton, and a preface by the Editor of the Series, there are 17 chapters contributed by 27 authors who were either officers of the Medical Department or Consultants of the Preventive Medicine Service during the War. The chapter subjects include: Actinomycosis, Epidemic Conjunctivitis, Hookworm, Leprosy, Leptospirosis, Schistosomiasis, Skin Infections (Fungous Infections, Impetigo, Scabies), Trachoma, Tularemia, Venereal Diseases, Yaws, Bullis Fever, Infectious Mononucleosis, Lymphocytic Choreomeningitis, Poliomyelitis, Q Fever, and Viral Hepatitis.

In so far as the respective diseases warrant, data are included from the training camps in the United States and England, then information is presented concerning the respective diseases in the overseas theaters of operation. Some chapters are succinct historical accounts, while others are so prolix that the reader is fatigued in attempting to obtain the essential points. This suggests that competent and often distinguished medical specialists are not always skilled in presenting their subjects in clear scientific prose.

Significant advances have taken place since the end of World War II in the prevention and control of some of the diseases included in this volume while in other instances their epidemiology and control are still poorly understood. One should keep these facts in mind in attempting to evaluate the effectiveness of preliminary indoctrination in disease prevention among the military forces in World War II, previous to the time they were sent into combat areas, often into regions with high prevalence of diseases with which the field officers and their troops had no previous experience. Moreover, venereal disease had been no problem in the Solomons and New Guinea but almost as soon as U. S. forces landed in the Philippines gonorrhea became a major medical problem, only second to schistosomiasis on Leyte and Mindanao. On the whole, considering all theaters of operation the Preventive Medicine Service of the Army did a remarkably good job in directing control of disease in combat areas, particularly in view of the hostility of some field officers to "interference" from Washington.

This large octavo volume has a pleasing format and is well printed on glossy paper so that the illustrations are produced to advantage. There is a single comprehensive index. The editor, his staff and consultants are to be commended on the care of compilation of this fourth volume under their guidance.

ERNEST CARROLL FAUST, PH.D

Hemodynamics of Aortic and Mitral Valve Disease; by A. J. Gordon, P. A. Kirschner, and H. L. Moscovtz, Grune & Stratton, 1961, 136 p. $5.75.

The exigency for medical publication has too frequently passed its apogee when the compilation of an immense number of printed reports finally reaches book form. This is particularly apparent in the swift stream of cardiovascular hemodynamics, the subject of this book. The authors have chosen the central theme of the transbronchial left atrial puncture, and their experience with it, in relation to mitral and aortic valve disease. Their data extend from 1956 through 1960. The advent of the more desirable transseptal approach through the right atrium, in the winter of 1959, has been accepted almost completely by physicians working in this area of cardiology. The introductory remarks of the chapter on technique tacitly acclaim the greater safety and simplicity of the transseptal approach as compared to the Armageddon one frequently encounters in attempting bronchoscopy on a critically ill dyspneic patient. This has surely been the experience in this reviewer's laboratory. Albeit, the data on the pressure curves obtained are valid and worthy of consideration. Unfortunately, the author's present no measurements of flow, stating that the length of time required for right and left heart catheterizations necessitated the omission of measurement of cardiac output. It is particularly difficult to appreciate hemodynamic data from pressures alone, without information regarding flow, volume, and vascular tone. No dye dilution curves, or angiocardiograph data are presented in this study of aortic and mitral valve disease. Thus the central theme has largely been abandoned, and the developments suffer from insufficient data.

The book is conveniently divided into five sections indicating typical and atypical pressure curves (occasionally appearing badly dampened) in the left atrium and ventricle in mitral stenosis, mitral regurgitation, aortic stenosis, combined aortic lesion, and pure aortic insufficiency. Explanatory notes are presented in both the text and under illustrations. The latter are quite well produced, but offer no advantage over the many superb ones appearing in the standard cardiological journals, over the past three or four years. These exegeses present no major deviation

from the well-known and generally accepted hemodynamic principles related to valvular disease. One may only cavil at a few of the particulars.

The arbitrary choice of a gradient of 15 mm./Hg. across the mitral A-V valve as the desideratum for "tight mitral stenosis", in the absence of flow measurements is open to question. The same criticism applies to gradient of 50 mm./Hg. at the aortic valve. Direct ventricular puncture, of which the authors have done 150, is no longer recommended. The recent improvement of sliding the catheter over the transseptal needle makes left ventricular entry quite simple. Retrograde catheterization of the left ventricle, either via the femoral of brachial artery will assist in differentiating various types of aortic stenosis, but produces artificially high gradients. This approach is generally successful in the various congenital forms of aortic stenosis; acquired stenosis presents a greater problem. Except in very small children, the transseptal route has proven simpler and safer. The risk of sacrificing a major artery, too, is vitiated. The early fears of myocardial damage from inadvertently entering coronary arteries via the retrograde approach have not been realized in many large series. The patient experiences no discomfort and the misadventure (when it is a misadventure) becomes more a nuisance than a catastrophe. It is readily discovered and corrected. ST segment shifts, occurring after 2-3 minutes of coronary intubation disappear quickly with extubation.

This book offers the early experiences of one group of workers, under one cover with a fairly adequate bibliography. It is unfortunate that the perfections of technique introduced during the last two years are poorly dealt with. The book suffers from inadequate data, especially related to flow measurements. The lack of dye dilution and angiocardiographic techniques severely limits the authors' scope.

ALBERT L. HYMAN, M. D.

Introduction to Anesthesia — The Principles of Safe Practice; by R. D. Dripps, J. E. Eckenhoff, and L. D. Vandam, W. B. Saunders Company, 2d ed. 1961, 413 p. $8.00.

This is a second edition and has been expanded and rewritten to a large extent. The book is extremely well written. It is a joy to read because of its straightforward and positive approach to the problems of anesthesia. Each chapter produces several "pearls" that can be put to daily use in anesthesia. The bibliography is current and the index is adequate.

The authors still regard this volume as an introduction to anesthesia; however, if one applies the useful information contained in this book to daily practice he will have more than an introduction to the subject and will contribute to the safer practice of anesthesia. The book is recommended reading for all who have an interest in anesthesia.

ARVIL KIRK, M. D.

Progress in Liver Disease, v. 1 edited by Hans Popper, Fenton Schaffner, Grune & Stratton, 1961, 363 p. $13.75.

This publication is a valuable addition to the textbook literature on liver disease. Each author presents his subject well, however, the multiple author approach results in considerable loss of continuity. This text has limited value for medical students but considerable value for postgraduate students of medicine.

FRED M. HUNTER, M. D.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

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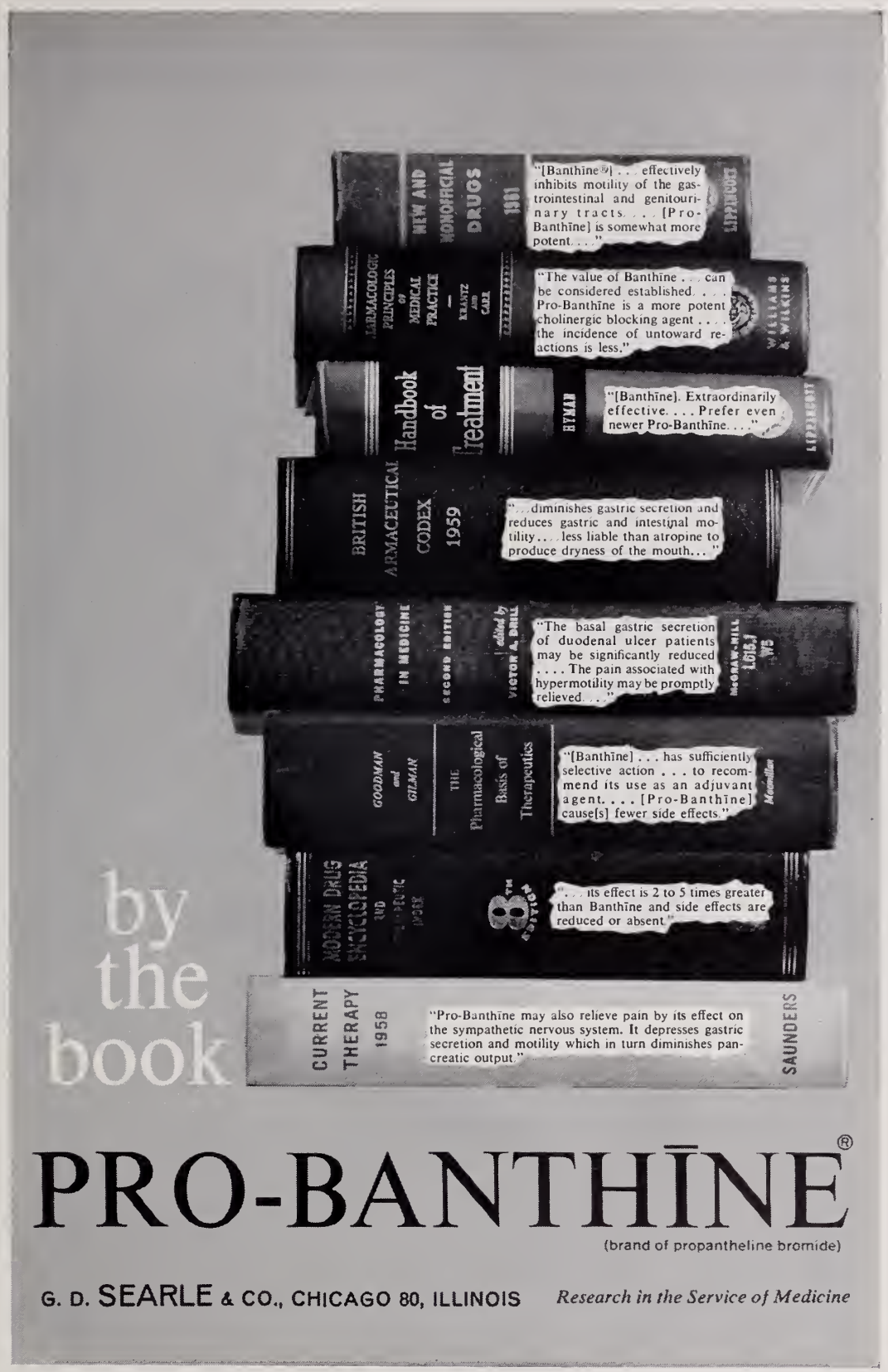
Appleton-Century-Crofts, N. Y.: The Immunology of Rheumatism, by Jerzy B. Kwapinski, M. D. and Marshall L. Snyder, Ph.D.

Doubleday & Co., Inc., N. Y.: Between Us Women; A Woman Doctor's Handbook on Pregnancy and Birth, by Laura E. Weber, M. D.; The Reluctant Surgeon: A biography of John Hunter, medical genius and great inquirer of Johnson's England, by John Kobler.

Grune & Stratton, Inc., N. Y.: Body Fluid Disturbances, edited by W. D. Snively, Jr., M. D., with seven contributors.

W. B. Saunders Co., Phila.: Textbook of Pathology with Clinical Application, by Stanley L. Robbins, M. D. (2nd edit.); Diagnosis and Management of Pain Syndromes, by Bernard E. Finneson, M. D.; Fundamental Skills in Surgery, by Thomas F. Nealon, Jr., M. D.

The C. V. Mosby Co., St. Louis: Synopsis of Obstetrics, by Charles E. McLennan, M. D., (6th edit.).



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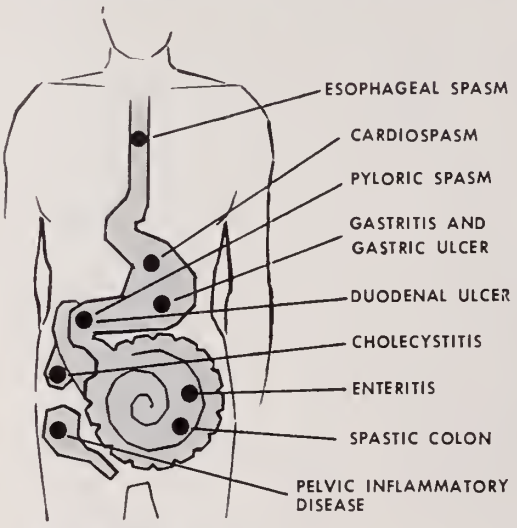
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1. Borota, A., and Grineil, R.N.: J. Amer. Geriatrics Soc., 10:413, 1962.
2. Spoor, H. J.: N.Y. State J.M. 58:3292, 1958.
3. Lubowe, I. I.: Western Med. 1:45, 1960.
4. Weissberg, G.: Clin. Med. 7:1161, 1960.

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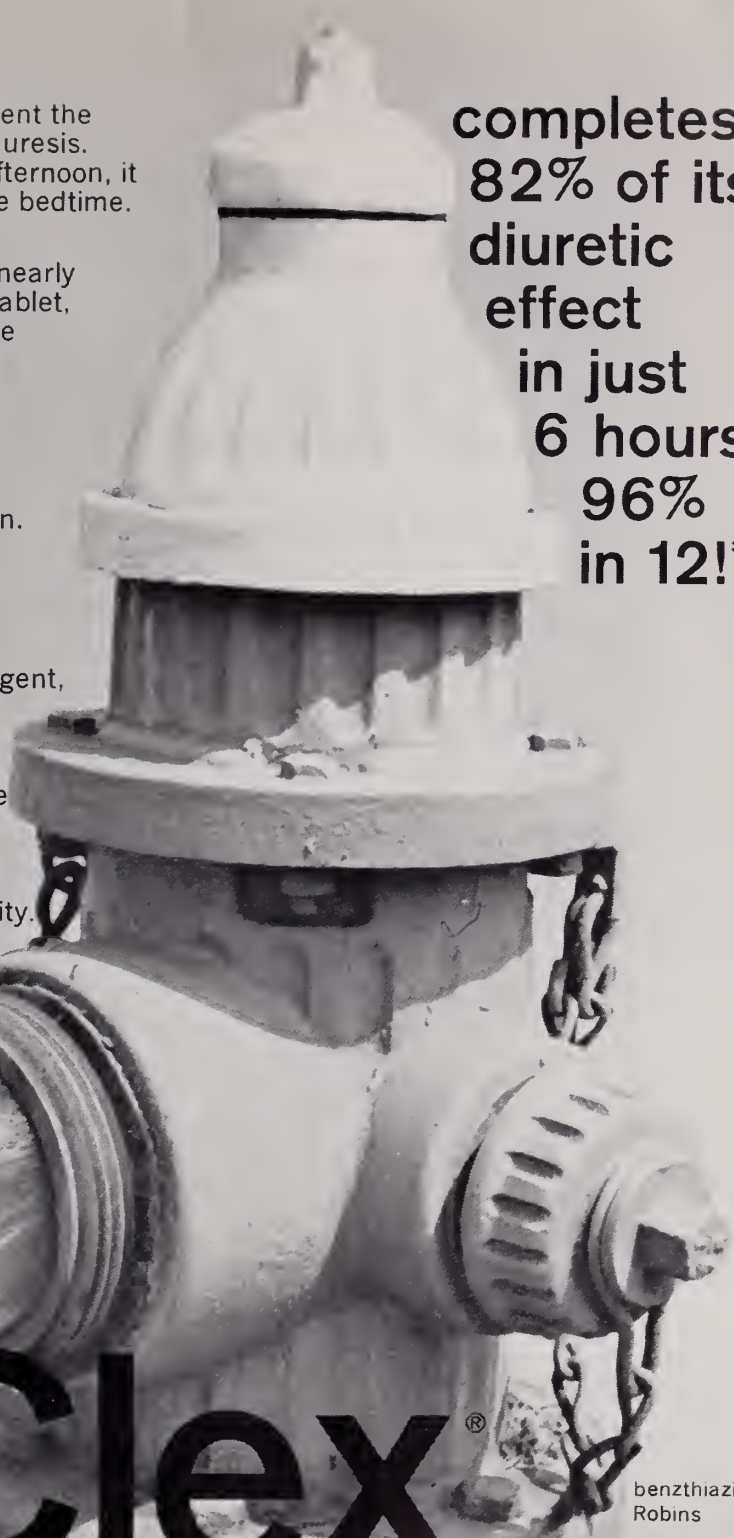
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*R. V. Ford: Cur. Ther. Research, 2:51, 1960.

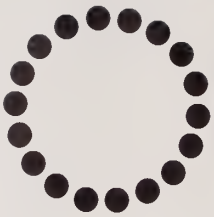
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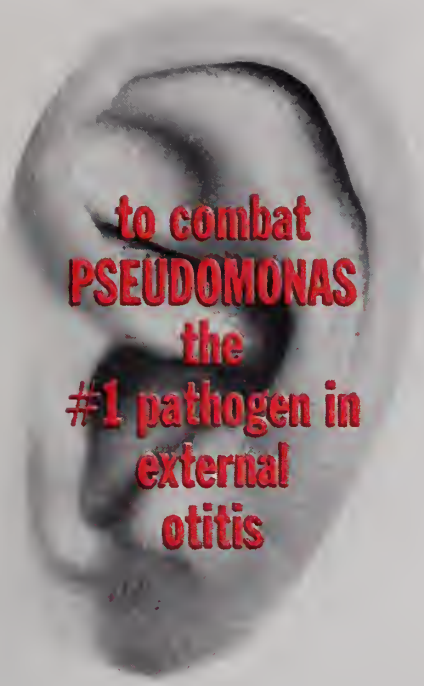
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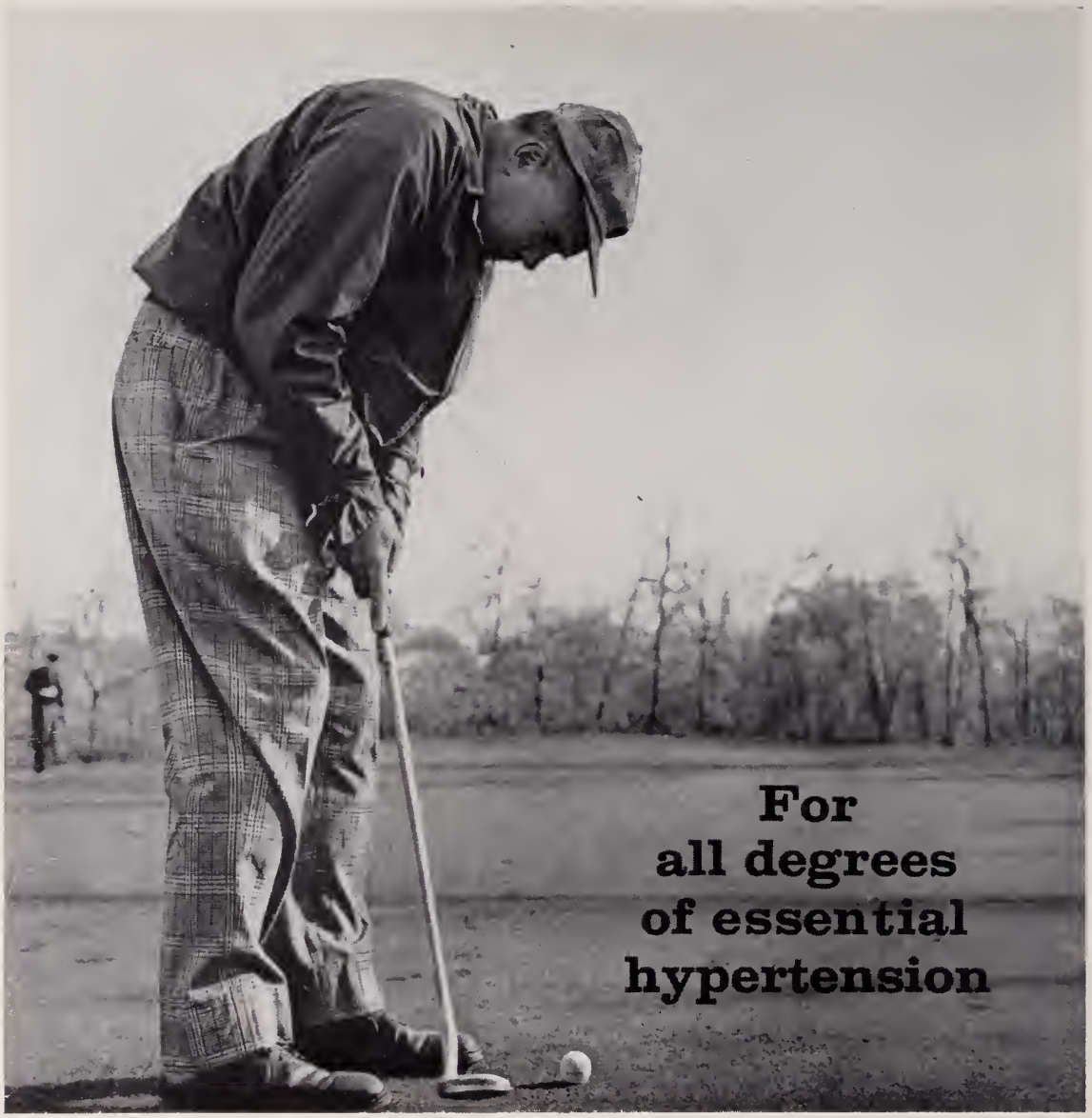


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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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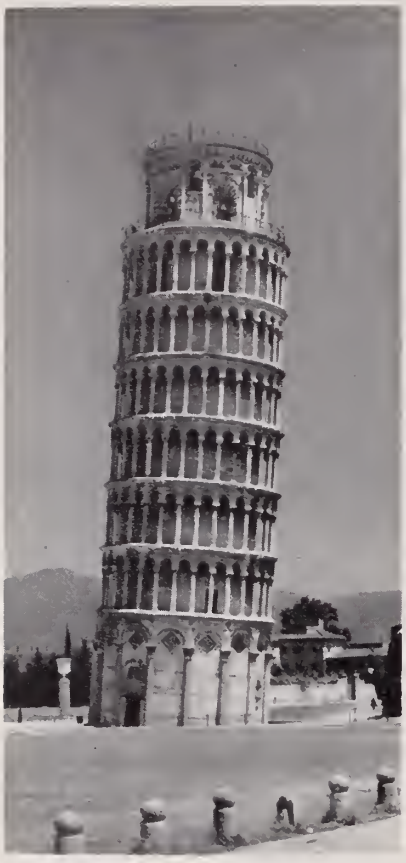
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1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

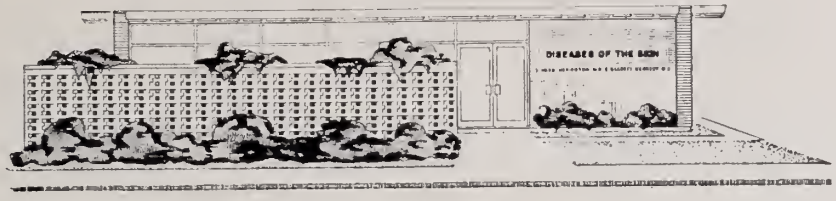
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JOINT STATEMENT ON POLIO VACCINATION IN LOUISIANA BY THE LOUISIANA STATE BOARD OF HEALTH, LOUISIANA STATE MEDICAL SOCIETY, LOUISIANA CHAPTER OF THE AMERICAN ACADEMY OF PEDIATRICS, ORLEANS PARISH MEDICAL SOCIETY, AND NEW ORLEANS HEALTH DEPARTMENT

The poliomyelitis situation in Louisiana does not present an urgent problem at this time. Since the advent of the Salk vaccine, the incidence of polio in Louisiana has steadily declined. Through July 1960 there were 23 cases of paralytic polio, compared to 12 through July 1961. So far this year there were only 7 cases of paralytic poliomyelitis in the state.*

The medical authorities in the state have a plan ready to put into operation for meeting any emergency situation that may arise in relation to polio. In the meantime, the following recommendations are made:

Recommendations

(1) Salk vaccine be continued for routine immunization programs or any program where administration of vaccine is on an individual basis, since it contains all three types of virus protection and therefore affords some protection against all strains even after one or two injections. A booster of Salk vaccine should be given at least every two years.

(2) The oral vaccine at present is not recommended for administration on an individual basis, except as follow-up after a mass immunization program has been accomplished in a community.

(3) The oral vaccine should not be administered during the summer months except in the face of a threatened epidemic.

* No cases of poliomyelitis have been reported so far this year in the Parish of Orleans.

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Louisiana State Board of Health

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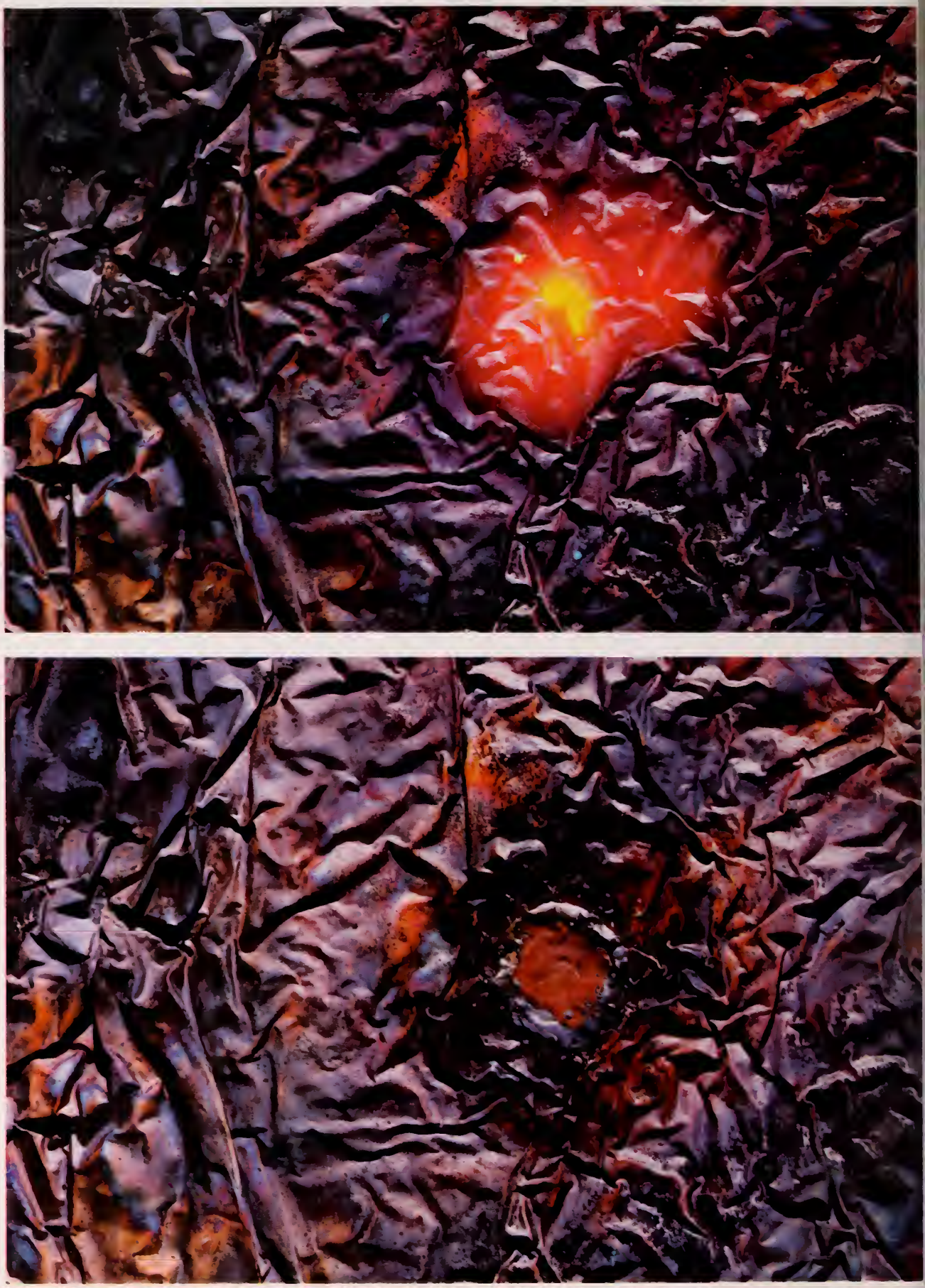
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"What results can I expect in my ulcer patients?" Shown below is a tabulation of 795 ulcer patients, reported by 69 investigating physicians, in which glycopyrrolate was the anticholinergic employed. They represent a cross section of ulcer patients of all ages, both ambulatory and hospitalized, under various regimens, from all sections of the country.

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Pyloric Channel Ulcer	6	3	1	0	2	2	1	1	0	0
Pyloric Ulcer	4	2	1	1	0	1	1	0	0	0
Gastric Ulcer, bleeding	3	1	2	0	0					
Gastric Ulcer	48	31	11	1	5	12	5	7	0	0
Gastric Ulcer, penetrated	1	0	1	0	0	1	1	0	0	0
Gastric Ulcers, multiple	1	1	0	0	0					
Duodenal Ulcer	494	220	195	48	31	99	41	38	13	7
Duodenal Ulcer, bleeding	38	19	15	3	1	2	1	0	1	0
Duodenal Ulcer, obstruction	13	4	3	1	5					
Duodenal Ulcer, perforated	5	2	1	0	2	6	0	3	1	2
Gastric and Duodenal Ulcer	4	2	2	0	0					
Peptic Ulcer, unspecified	25	19	4	0	2	18	8	7	2	1
TOTALS	653	307	239	57	50	142	58	57	17	10
		83.6%					81.0%			

*Clinical reports on file, A. H. Robins Company, Inc.

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REFERENCES: (1) Roseman, E.: *Neurology* **11**:912, 1961. (2) Bray, P. F.: *Pediatrics* **23**:151, 1959. (3) Chao, D. H.; Druckman, R., & Kellaway, P.: Convulsive Disorders of Children, Philadelphia, W. B. Saunders Company, 1958, p. 120. (4) Crawley, J. W.: *M. Clin. North America* **42**:317, 1958. (5) Livingston, S.: The Diagnosis and Treatment of Convulsive Disorders in Children, Springfield, Ill., Charles C Thomas, 1954, p. 190. (6) *Ibid.*: *Postgrad. Med.* **20**:584, 1956. (7) Merritt, H. H.: *Brit. M. J.* **1**:666, 1958. (8) Carter, C. H.: *Arch. Neurol. & Psychiat.* **79**:136, 1958. (9) Thomas, M. H., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, The Williams & Wilkins Company, 1956, pp. 37-48. (10) Goodman, L. S., & Gilman, A.: The Pharmacological Basis of Therapeutics, ed. 2, New York, The Macmillan Company, 1955, p. 187.

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5	P SC	− −	− −	
6	P SC	− −	− −	
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CODE: P=Seeded Plate; SC=Subculture In Sabouraud Liquid Medium; + = Growth; − = No Growth

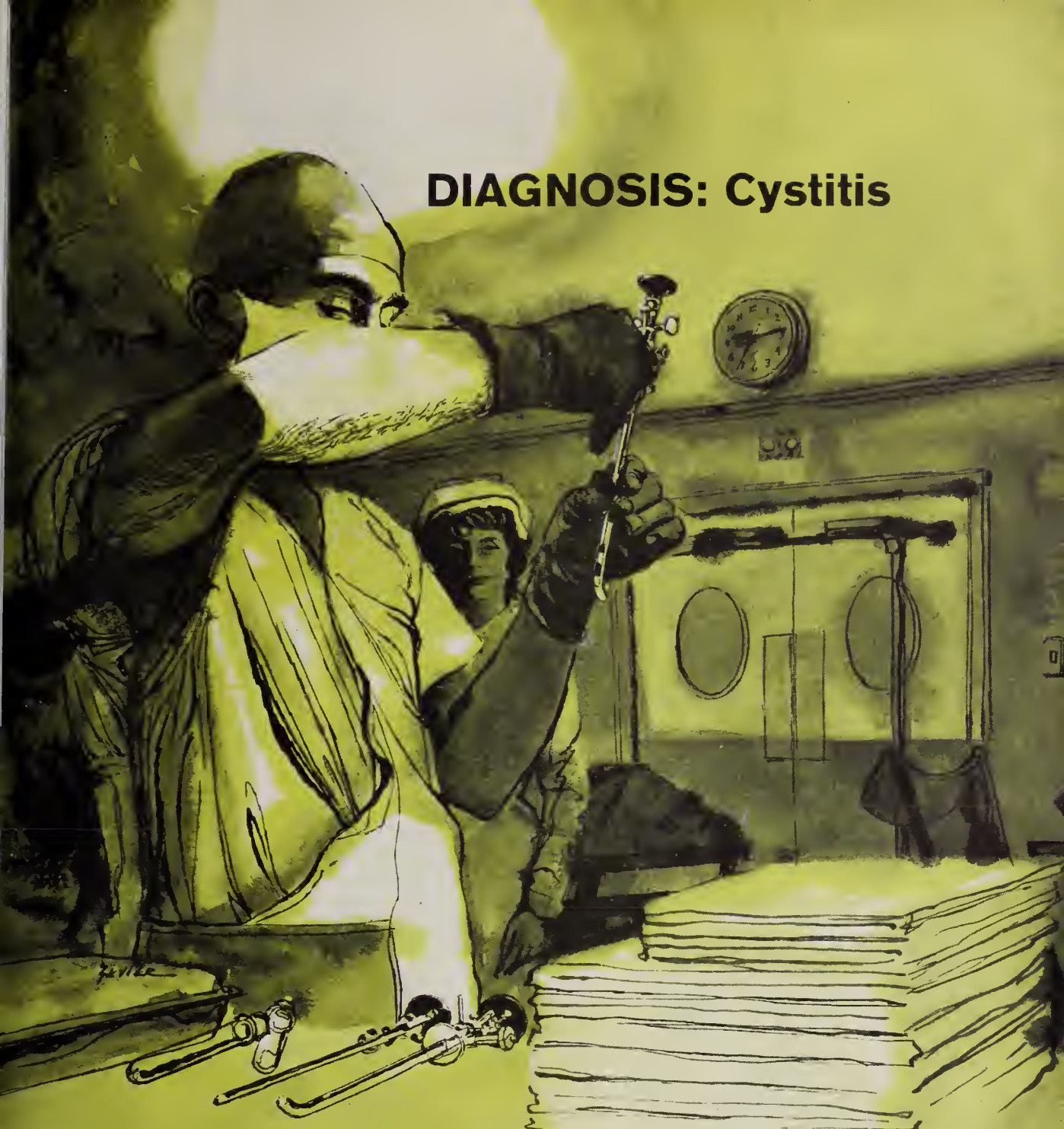
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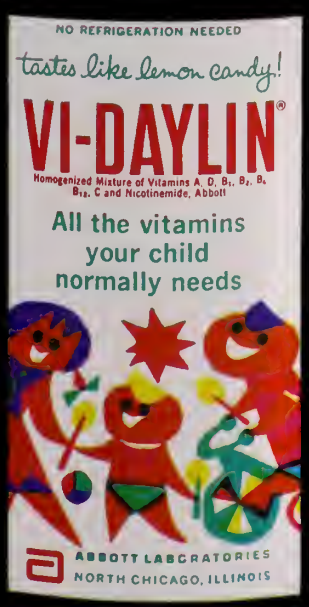
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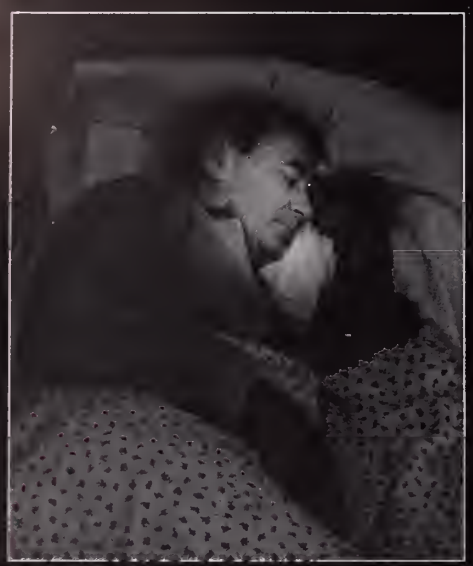
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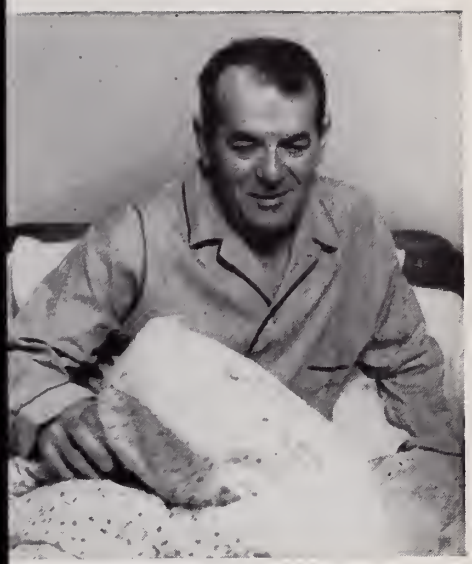


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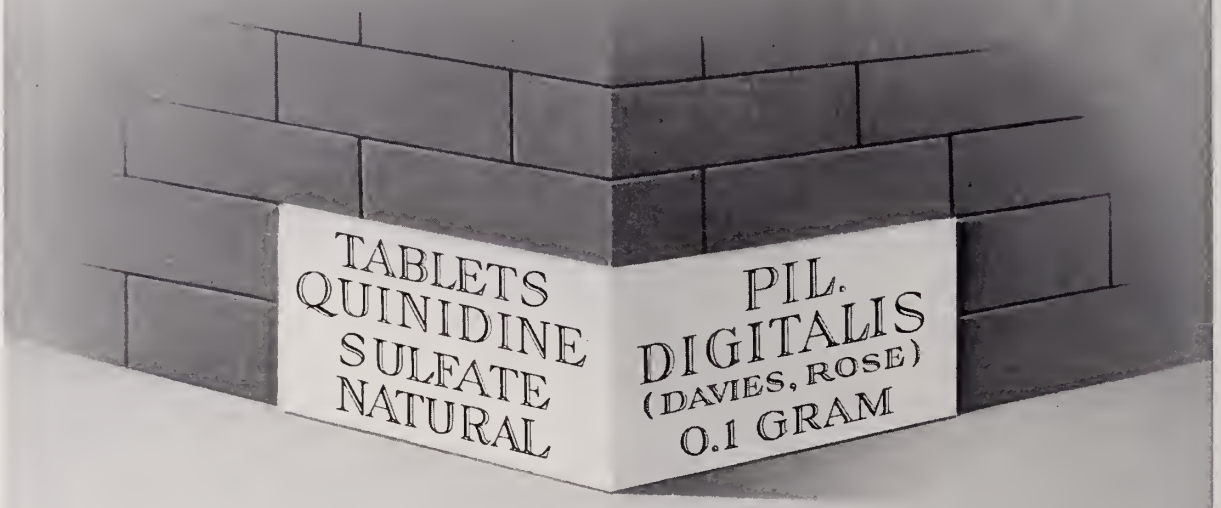
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A 15-Year Experience with Vagotomy And Antrectomy in the Surgical Treatment Of Duodenal Ulcer*

• The author discusses the current surgical methods of management of the complications of duodenal ulcer, with particular emphasis on vagotomy and antral resection. During the past fifteen years 1000 patients have undergone the combined procedure on their service.

J. LYNWOOD HERRINGTON, JR., M. D.†
Nashville, Tennessee

IT is indeed an honor to be asked to speak before the surgical section of the Louisiana State Medical Society. You have every right to be justly proud of this group, for so very many of your members, both past and present, have made outstanding contributions in practically every field of surgical endeavor.

I have chosen to discuss the current surgical methods of management of the complications of duodenal ulcer. Particular emphasis will be placed on the operative procedure of vagotomy and antral resection, as we have enjoyed a modest experience with this operation over the past decade and a half.

I think those of us interested in the surgical phase of treatment of duodenal ulcer are indeed privileged to live during this fascinating era. Our knowledge of gastric physiology is constantly increasing, and the physiopathology underlying duodenal ulcer disease presents a constant challenge. It is equally fascinating to observe the vast experimental and clinical progress being made in the treatment of the surgical complications of duodenal ulcer.

Over the past twenty-five years, we have seen simple gastroenterostomy replaced by adequate subtotal gastrectomy. Within the past two decades, several additional operative procedures have been developed through extensive experimental and clinical studies, each directed toward elimination of the ulcer diathesis. These procedures have now been put to extensive clinical trial, and the results being obtained at present, present a real challenge to the long time protagonists of the more radical operation of adequate subtotal gastrectomy. It will be even more intriguing to observe the follow-up studies of these various operative procedures during the next two decades.

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* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 6, 1962.

† From the Edwards-Eve Clinic, Nashville 3, Tennessee.

The four generally accepted operations used today to control the complications of duodenal ulcer are (1) adequate subtotal gastrectomy, (2) vagotomy combined with a drainage procedure, (3) segmental gastrectomy, and (4) vagotomy with antral resection.

Subtotal Gastrectomy

Subtotal gastric resection entailing the removal of 70 per cent or more of the parietal cell mass has been the most frequently employed procedure to control the ulcer diathesis during the past two to three decades. However, at present there can be no doubt that this operation has lost much of its appeal as more conservative procedures developed on a more physiologic basis are proving to be equally or more effective in controlling the complications of ulcer disease. With adequate subtotal resection, the rate of recurrent ulceration is usually 4 to 5 per cent. Also, in addition, an appreciable percentage of patients develop long range complications such as excessive weight loss, anemia, and nutritional problems. At present, there are those who feel strongly that this operative procedure may become obsolete within the next decade.

Vagotomy with a Drainage Procedure

Vagotomy with dependent gastroenterostomy was introduced by Dragstedt 19 years ago and, although the procedure received harsh criticism during the following decade, at present there are many groups in the British Isles and many clinics throughout this country and in Europe that utilize it extensively as definitive treatment for *duodenal* ulcer. The outstanding features of the operation are its low operative mortality and technical simplicity. Its advocates are willing to accept the 5 to 10 per cent recurrence rate associated with the procedure. They feel that the patient who develops a recurrent ulcer can later be subjected to either subtotal resection or antral extirpation if deemed necessary.

Vagotomy with pyloroplasty is a somewhat similar operation based on the elimination of the cephalic phase of gastric secretion by complete vagotomy and the prevention of antral stasis and minimization of the hormonal phase of secretion by a properly constructed pyloroplasty. This operation appears physiologically more attractive than vagotomy with gastroenterostomy. It preserves the normal gastric outflow tract and it is likewise technically simple to perform. The vagotomy must, however, be complete and the pyloroplasty must be large and patulous to insure prompt gastric emptying. A single layer interrupted silk pyloroplasty, as advocated by Farris and Weinberg, is an outstanding feature of the operation.

Weinberg has now performed vagotomy with pyloroplasty in approximately 1000 cases over a fifteen-year period, with a recurrence rate of approximately 5 per cent. Farris[2] has carried out the operation in 210 personal cases during the past twelve years, and the recurrent ulcer rate has been 2½ per cent. The total mortality was 2 per cent, but if those patients operated upon as emergencies for the control of massive bleeding are excluded, the mortality rate was only 0.5 per cent. Over one-half of his patients have been followed in excess of three years, and the general good results are in excess of 90 per cent.

Dorton[1] has performed vagotomy with pyloroplasty on 309 patients over a fifteen-year period. The average follow-up has been 5.9 years. The mortality rate has been just under 1 per cent, and the rate of recurrent ulceration has been 3.8 per cent. The overall results have been satisfactory (Fig. 1). The advocates of this operative procedure stress that *pyloroplasty* with vagotomy is a subtle or physiologic way of

VAGOTOMY AND  PYLOROPLASTY

	NUMBER OF CASES	PER CENT RECURRENCE	PER CENT MORTALITY
WEINBERG	1000	5 %	–
FARRIS	210	2.5%	2 %
DORTON	309	3.8 %	<1 %

Figure 1.

accomplishing antrectomy with much less effort and with less morbidity and mortality, inasmuch as it avoids the objectionable feature of attempting to excise or deal with the duodenal ulcer directly.

Segmental Gastrectomy

Segmental gastric resection was first devised by Mikulicz in 1897, but never enjoyed widespread popularity among gastric surgeons. The operation was reintroduced by Wangensteen in 1949, and actually it consists of an extensive supra-antral extirpation of the gastric reservoir with concomitant pyloroplasty. The physiologic reasoning behind the operation is to remove a large area of the parietal cell mass, but to leave behind a small remnant of the cardia and fundus, whose acid *p*H is utilized to produce resultant inhibition of antral secretion. The antrum is usually denervated by the gastric transection so that pyloroplasty is necessary to insure gastric emptying. Recently, Ferguson has taken meticulous pains to preserve the vagal twigs to the antrum and pylorus so as to avoid performance of pyloroplasty. Segmental resection has never been widely employed outside the Minnesota group and the procedure presents several disadvantages. It requires a radical excision of the gastric reservoir and, obviously, it cannot be used in the patient who has complete, or near complete, pyloric obstruction. Likewise, it is not the ideal procedure to employ when faced with duodenal ulcer perforation or with massive bleeding. The operation has not lessened the incidence of the dumping syndrome, and the rate of recurrent ulceration has been 4 per cent. Clarence Berne has used a similar operation combined with bilateral vagotomy, but at present he has practically abandoned this operation in favor of vagotomy with pyloroplasty or antral resection.

Vagotomy and Antral Resection

I think the single most important contribution to the surgical treatment of duodenal ulcer during our era thus far has been recognition of the importance of the vagus nerves in promoting gastric secretory activity. The experimental works of Dragstedt and Harkins in assessing the role of the pyloric antrum in the secretory function have also been outstanding. In the experimental animal, when twenty-four-hour quantitative secretions from Haidenhain pouches are collected, subsequent removal of the gastric antrum produces a profound reduction in gastric juice secreted by the isolated pouch. If the vagus nerves are then sectioned, the secretions are almost abolished entirely and the free HCl. value falls almost to 0. Thus, the vagus nerves and gastric antrum contain the key to the secretory activity of the gastric glands.

In October 1946, Smithwick performed the first vagotomy and conservative gastrectomy on a patient who had developed a marginal ulcer following simple gastroenterostomy. He dismantled the anastomosis, resected the distal 50 per cent of the stomach, divided the vagi, and performed a posterior Hofmeister reconstruction. The resection was termed a *hemigastrectomy*. Three months later, Edwards, unaware of Smithwick's work, carried out a bilateral vagotomy and estimated distal 40 per cent gastrectomy, with a Billroth II reconstruction, on a physician suffering from an obstructing duodenal ulcer. The resection was termed an *antrectomy*. Both observers felt that the combined operation was a physiologic approach to the problem directed toward elimination of the cephalic phase of secretion by vagotomy and removal of the humoral phase by antrectomy.

During the past fifteen years, the combined operation has been our procedure of choice when operating upon the patient with the complications of duodenal ulcer.[3] During this period ending in December 1961, 1000 patients have undergone the combined procedure on our services. Pain not responsive to prolonged medical measures was the indication for operation in 50 per cent of the series. Thirty per cent experienced massive or recurrent hemorrhage requiring surgical intervention. Pyloric obstruction was a primary indication in almost 20 per cent, and a small

group of selected patients have undergone the combined operation for acute perforation. The overall results have been very satisfactory indeed and have not diminished with the passage of time. The combined excellent and good results have been 93 per cent (Figure 2). With vagotomy

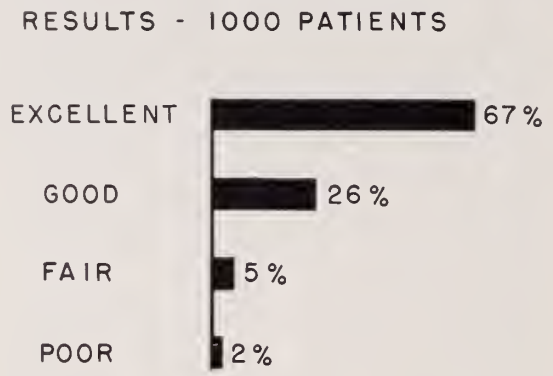


Figure 2.

and conservative resection, the dumping syndrome has been experienced by 25 per cent of the entire group, but in most instances postprandial distress has been mild and transient. In only a few instances has dumping been a major problem. Postoperative nutritional problems have been small indeed and only 10 per cent of the series have lost weight following operation to a level below what is deemed ideal. Postoperative anemias have been only rarely encountered. The preservation of an adequate reservoir, no doubt, is the main factor in preventing postoperative nutritional problems.

The operation thus far has been extraordinarly effective in controlling recurrent ulceration. Almost 500 patients in the series of 1000 have now been followed from five to fifteen years and only five recurrent ulcers have developed among the entire group (0.5 per cent incidence of recurrence). The rate of follow-up exceeds 98 per cent and these patients are seen at frequent intervals as the majority in the series consist of personal cases. Among the 5 patients who developed recurrences, 3 proved at subsequent operation to have had an incomplete vagotomy. The fourth patient probably had an incomplete denervation and the fifth patient was later found to have a malignant Zollinger-Ellison tumor (Figure 3). It is interesting that the 5 patients with recurrent ulceration developed symptoms suggestive of recurrence from two to twenty-four months following vagotomy with antrectomy. We have not seen a recurrent ulcer develop in any patient during the long range follow-up and this appears encouraging.

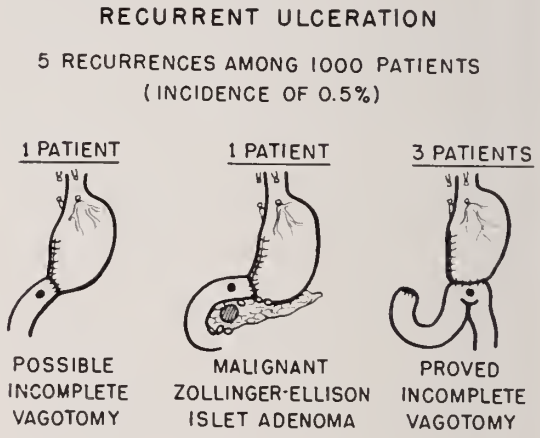


Figure 3.

The one disturbing factor in our experience has been the overall hospital mortality rate, which has been 2.8 per cent among 1000 patients. This figure is higher than we would like, but, on the other hand, it compares favorably with the mortality following adequate subtotal resection, which varies from 2 to 5 per cent in large reported series. Our highest incidence of postoperative deaths occurred during our earlier years of experience with the combined operation. Also, over one-half of the total deaths occurred in elderly, poor-risk patients, who underwent emergency operation to control massive bleeding. When this latter group is excluded, the mortality is 1.8 per cent. If only the personal cases are included, which comprise over 500 of the total group, the hospital mortality is approximately 1 per cent.

During our early years of experience with vagotomy and antral resection, a Billroth II reconstruction was utilized exclusively; however, after Harkins published his report in 1953, in which he described vagotomy, antrectomy, with end-to-end gastroduodenostomy, we became interested

in this type of reconstruction. During the past seven years, a Billroth I anastomosis has been employed on our service with increasing frequency. It is our opinion at present that end-to-end gastroduodenostomy can be safely performed on most cases subjected to the combined procedure. At first, it was our policy to carry out end-to-end gastroduodenostomy only if the ulcer could be safely and completely removed. However, we do not hesitate at present to utilize a Billroth I reconstruction, even though the entire posterior wall ulcer is not completely removed. If the scarred posterior duodenal wall is acceptable for anastomosis and, more important, if the anterior duodenal wall is soft and pliable and relatively uninvolved in the ulcer process, then end-to-end gastroduodenostomy is carried out. In instances where both the anterior and posterior duodenal wall are unduly scarred and indurated, it is safer to close the duodenal stump and perform a Hofmeister reconstruction.

The results obtained with the Billroth I and Billroth II reconstructions following vagotomy and antrectomy are approximately the same. However, we have made it a point whenever technically possible to perform the Billroth I reconstruction on patients who are underweight prior to surgery, and also in all female patients subjected to operation. It is our decided opinion that these two groups fare better with a Billroth I reconstruction. The Billroth I reconstruction has also been used in several patients with large retrobulbar ulcers. The ulcer crater may be obliterated with silk sutures prior to performing end-to-end gastroduodenostomy.

Fortunately, stomal obstruction in our experience has not been a major problem following a Billroth I reconstruction with vagotomy and antrectomy. This complication has occurred in only 5 per cent of approximately 500 patients. The largest number occurred during the first few years of our experience with the combined procedure and could usually be accounted for by technical errors in performance of end-to-end gastroduodenostomy. The utilization of fine suture material and meticulous technique is employed in order to avoid this complication. Faulty judgment on the part of the operator in the selection of cases for gastroduodenostomy may also account for a few cases of postoperative obstruction. An unduly scarred duodenum, with a large ulcer crater adherent to the pancreas, will lend itself better to duodenal stump closure or catheter duodenotomy. This is a wiser choice than attempted re-establishment of gastroduodenal continuity.

We have encountered 5 unique cases of stomal obstruction, which first became manifest during the long range follow-up after a Billroth I anastomosis. These patients first developed symptoms suggesting obstruction beginning several weeks to even years following vagotomy with antrectomy. In 3 instances, at re-operation, the gastroduodenal suture line was found adherent to the inferior aspect of the right lobe of the liver, producing angulation and obstruction. One of these cases developed obstructive symptoms for the first time seven years after the original vagotomy and antrectomy. Two cases have been encountered in which the gastroduodenal suture line became adherent to the gallbladder fossa in patients who had undergone simultaneous cholecystectomy. This obstruction was not manifest until several weeks postoperatively. At present, to prevent the above complication, the greater omentum is routinely brought up and interposed between the gastroduodenal suture line and the inferior surface of the liver following completion of the combined procedure.

Discussion

Complete vagotomy with antrectomy is probably the most effective operative procedure that the surgeon uses today to insure protection against recurrent ulceration. The gastric pouch following the combined procedure is usually void of fasting free HCl, and usually there is no acid response following test meal and histamine stimulation. A large group of post-

operative patients have now been followed for a sufficient time period so that the former critics of the operation can no longer voice the criticism that more time is needed to assess the therapeutic effectiveness of the operation. Each group throughout the country and elsewhere has remarked about the low incidence of recurrent ulceration following this combined procedure.

The one disadvantage of vagotomy with antrectomy is still the hospital mortality rate, which is approximately the same as that associated with radical gastrectomy. This mortality rate is considerably higher than that reported following the more conservative procedure of vagotomy with pyloroplasty or gastroenterostomy. Since vagotomy with antrectomy appears to have largely solved the problem of recurrent ulceration, it appears that our main focus should now be directed toward lowering the mortality rate following operation for duodenal ulcer. During the past few years, we believe we are solving this problem to a large degree by adopting the following surgical philosophy. It is our opinion that vagotomy with antrectomy can be safely and effectively performed in the majority of patients who are operated upon for the complications of duodenal ulcer, and this remains our procedure of choice in most instances. However, when confronted with the poor-risk patient with associated disease, with the elderly massive bleeder, or with the malnourished and underweight patient, vagotomy with pylorplasty is performed in preference to antrectomy. In the patients who present with a large inflammatory mass about the duodenum, which might make resection hazardous or pyloroplasty impossible, vagotomy with dependent gastroenterostomy is the preferred operation.

I like to think of the above approach to the surgical problem of duodenal ulcer as involving a course in surgical strategy. A particular operative procedure is wisely chosen to meet the needs of that particular individual, with the aim that the chosen surgical treatment will correct the ulcer diathesis and produce the least morbidity and least threat to life.

Summary

The current surgical procedures used for the treatment of duodenal ulcer have been discussed, with special emphasis being placed on vagotomy with antral resection.

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No Detailmen in USSR

Too much time is wasted in pharmacies compounding prescriptions, and this is only because the physicians do not know about the precompounded drugs. . . . Obviously, only very few general practitioners follow the literature in which the new drugs are prescribed. . . . On the other hand pharmacy employees do not inform physicians about existing drugs. They do not come to the polyclinic and do not promote the new pharmaceuticals.—**Meditsinskii Rabotnik** (Moscow), May 19, 1961.

A Practical Approach To The Sinus Problem*

• Very often what the patient calls sinus trouble is something else caused by allergy, excessive smoking, vasomotor rhinitis, or some other cause.

THOMAS P. RAGGIO, M. D.
JAMES W. McLAURIN, M. D.
McHUGH SIMMONS, M. D.
Baton Rouge

TELL a stranger you have sinus trouble and you have found a sympathetic listener. One of the popular periodicals several years ago contained an article which proclaimed that more than 30 million people in the United States suffered from some form of sinus disease and spent over 200 million dollars annually on medication, frantically searching for relief.

Symptoms

This is perhaps a reasonable estimate of those who think they have sinus disease, but actually, 15 per cent of this number would likely represent those with true sinus disease. The other 85 per cent have symptoms arising primarily in the nose or throat, or perhaps have nose and sinus symptoms as part of the general picture of some systemic disorder. How to tell one from the other becomes the initial problem in our work-a-day practice.

The patients complaining of sinus disease present a variety of complaints, such as nasal obstruction, discharge, sneezing, postnasal drip, headache, sore throat, cough, dizziness, bad taste, anosmia, early morning nausea and vomiting of mucus, nose bleeds, or even such things as insomnia, nervousness, or diarrhea.

The singlemost suggestive symptom of true sinus disease is pain. If there has been no complaint of pain, the patient can temporarily be placed in the doubtful sinus disease category.

Pain, when present, may be in the form of headaches, but is more characteristically localized over the involved sinus. Localized tenderness is usually present on deep pressure. Pain on light touch or cutaneous hyperesthesia is not typical. The pain pattern may be characteristic. Frontal sinus pain usually begins after arising, builds to a peak at noon, and subsides in the early afternoon. Maxillary sinus pain usually is not marked in the morning, but progresses during the day and is worse at night. Ethmoid pain is usually located behind the eyes or in the temples, whereas sphenoid pain commonly affects the occipital region. The time pattern is not consistent. Pain from all areas is constant and boring in nature, and changes to throbbing on stooping, exertion, excitement or coughing. The onset is gradual and opiates may be necessary for relief. Headache, associated with nasal obstruction, which is relieved by nose drops or sprays, is not suggestive of sinus disease, but is due to differences in pressure and is primarily a nasal problem.

Discharge is another common component of true sinus disease. Thick colored, bloody, malodorous secretion is typical. Discharge may be scant or absent at the height of pain and an increase in discharge marks a decrease in pain. Discharge of this nature without history of pain arouses suspicion of neoplasm or foreign body. This suspicion is more pronounced in the absence of history of a preceding upper respiratory infection.

Physical examination confirms a history of nasal discharge, nasal obstruction

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 9, 1962.

and localized tenderness over the involved sinus. Nasal and pharyngeal membranes are swollen and inflamed and mucopurulent discharge adheres to the pharyngeal wall. The involved maxillary ethmoid of frontal sinuses are dense to transillumination and x-ray examination may show a fluid level, but more frequently a diffuse haziness. Mild thickening of the mucous membranes is of little clinical significance. Malaise, chills and fever to 103 to 104 degrees are frequent in children. Adults seldom reach 102 degree temperature.

Chronic sinus disease may be difficult to distinguish from allergy with secondary infection. Discharge is the chief complaint and is usually viscid and colored. Pain is not common. Nasal polyps, if present, suggest an underlying allergy. One or more sinuses may be clouded to transillumination and x-rays may show polypoid changes in the sinus mucous membranes. Nasal smears show predominantly polys and lymphocytes. The absence of eosinophils does not rule out allergy.

Therapy

Therapy is directed towards systemic needs such as relief of pain, steam inhalation, hot applications, antibacterials, oral decongestants, such as sudafed, propadrine, or ephedrine, and sinus gavage, when symptoms localize. Sinus gavage should be repeated every two to three days until the return is clear. Frontal sinus gavage, however, has lost popularity. Enzyme preparations of trypsin-chymotrypsin are beneficial. For chronic cases, culture and appropriate anti-bacterials, removal of nasal polyps, sinus gavage, and evaluation of underlying allergic problems are necessary. Sinusotomy and removal of the lining epithelium may be necessary in resistant cases.

Differential Diagnosis

The person who denies pain has practically eliminated himself from the select 15 per cent and belongs to the remaining 85 per cent. The majority of the remainder of patients who think they have sinus disease will fall into one of three categories, that is:

1. Excessive smokers; 2. Allergy; 3. Vasomotor rhinitis.

A few simple questions will help differentiate these.

1. Are symptoms present the year around? If so, suspect excessive smoking or a common perennial allergen, such as house dust.

2. Are symptoms intermittent? If so, are they:

(a) Seasonal

(b) Related to eating or drinking

(c) Related to activities such as horse back riding, painting, gardening, training pets.

(d) Present only at work or only at home

(e) Is there a family history of hay fever, asthma or hives?

An affirmative answer to any of these suggests an allergic problem.

3. Are symptoms:

(a) Related to weather changes?

(b) Related to periods of tension or emotional stress?

(c) Produced by getting wet, drafts, washing hair, air conditioning or bright sunlight.

An affirmative answer makes one suspect vasomotor rhinitis.

Physical examinataion of the patients falling into these foregoing groups may not reveal a great deal of different findings. The excessive smokers are perhaps the easiest to distinguish because of tar deposits on the tongue and nostrils and dry granular injected appearing nasal and pharyngeal membranes. A comparative characteristic appearance is of dusty red sand paper.

Allergic rhinitis produces pale, almost white, nasal turbinates, with moist edematous mucous membranes. Vasomotor rhinitis, on the other hand, produces a similar picture, except the color of the turbinates has a grayer or cyanotic color, due to venous engorgement and stasis.

We are all too familiar with other symptoms which may be associated with a true allergy, such as itching, sneezing, water-

ing eyes, facial edema, urticaria, or asthma, and these are only mentioned in passing.

Therapy in the case of excessive smoking is simply discontinuance of smoking. Cutting down is not satisfactory. Desensitization is of questionable value. A minimum of two weeks is necessary following discontinuation of smoking before improvement may be expected. Complete relief may require many weeks.

Management of allergic patients is most satisfactory if offending allergens can be avoided. A critical evaluation of circumstances and specific contacts prior to onset of symptoms may uncover the causative allergen. Elimination diets are helpful in determining symptom producing foods and drink. Failure to determine allergens by these methods suggests a more complex problem, possibly involving many foods or inhalents or combination of both. Skin testing and management by a trained allergist are then indicated. Antihistamine alone or in combination with decongestents by mouth are beneficial for temporary relief of symptoms. Intranasal drops, sprays or inhalers are not indicated, and in fact, may worsen or prolong symptoms in allergic patients.

Therapy for vasomotor problems is even less encouraging than for allergy. Tense and emotional persons need guidance concerning their specific problems. Tranquilizers are beneficial. We cannot control the weather, therefore, those affected by changes must use caution in dressing properly, avoid overheating and sudden cooling; avoid sitting in drafts, and similar situations; oral decongestants reverse the vasodilitation in the mucous membranes and relieve symptoms.

The few remaining undiagnosed cases may be due to a wide variety of causes. Prominent is overmedication with nasal sprays and drops. Many a stubborn case having nasal and sinus symptoms has been cured by discontinuance of intranasal medication. Others may be related to systemic disease, such as hypothyroidism, anemia, renal disease, blood discrasias, endocrine disfunction, congestive heart disease, toxemia of pregnancy, cystic fibrosis, and, of course, neoplasms in the air passages. Naturally occurring states of the endocrine shifts, such as menstruation, pregnancy and menopause, may produce nose and sinus symptoms.

Well known are the nasal symptoms produced by drugs used in therapy of unrelated conditions. Antihypertensive drugs are common offenders, as is nitrogen mustard and other antimetabolites. Drugs supplementing or influencing endocrine gland activity may indirectly produce nasal symptoms, therefore a careful drug history must be obtained. Secondary infection may obscure an underlying problem, and, of course, any of the problems discussed, may occur in combination.

A final word must be said regarding sinus pain not of sinus origin. This includes dental pathology, facial neuralgias, migraine and other vascular headaches, tension headaches, intracranial expanding lesions, to name a few. Disease of this sort must be suspected if the primary nose and sinus problems can be eliminated.

The ancient old wives tale of the sinus dripping into the bronchial tubes resulting in coughing up copious amounts of mucous is mentioned only to discredit it. No doubt an upper respiratory infection may spread to the lower bronchi and lungs by direct contamination of bacteria, however, the protective mechanism of the larynx does not permit passage of such vast quantities of foreign material from the nasopharynx. The more likely explanation is that the secretion is actually produced by the mucous glands in the tracheobronchial mucosa as the result of allergic, vasomotor, endocrine, or inflammatory stimulus and is expectorated from there. Therefore the same pathologic mechanism may be taking place simultaneously in the upper and lower air passages.

Summary

A condensed and rather simple procedure has been outlined to facilitate diagnosis and categorize the majority of patients with nose and sinus complaints, as seen in the average office practice. The

relatively few problems of a more complex nature require much more study and specific diagnostic and therapeutic measures.

Discussion

Dr. A. Denbo Montgomery (Lafayette): I would like to congratulate Dr. Raggio on the presentation of his fine discussion of the sinus problem. I certainly agree with the false but popular opinion that every other person has sinus difficulty. A postnasal drainage is normal, but only when the patient is cognizant of this flow is it significant but then only seldom is it due to sinus involvment for the normal nose may produce in excess of a 1000 cc. of fluid in twenty-four hours.

The respiratory nasal mucosa is composed of pseudo-stratified ciliated columnar epithelium which overlies in many areas cavernous spaces that take on the aspects of erectile tissue so that by filling or emptying may control the airflow through the nose. It also controls the temperature of the air reaching the nasopharynx in a similar manner. This respiratory epithelium forms a mucous blanket that is continuously moved by cilia posteriorly. It also contains an enzyme, Lysozyme, which is effective against bacteria. Any foreign matter, bacterial dust, etc. is collected on this blanket and moved posteriorly into the pharynx where it is swallowed. The function of this mucus is under control of the autonomic nerve system. At the same time the mucus and serous glands supply moisture as needed so that the nose also has an accurate humidity control. Changes in the pH may affect the action of Lysozyne or the action of the cilia so that many factors may control the nasal physiology, besides infection, allergy and mechanical obstruction. Excessive use of drugs may interfere with the cilia or control of humidity or airflow.

Sympathetic imbalance or metabolic disorders may also vary the course of the normally acting nose. Usually the nose is relatively sterile while potential pathogens are present in the nasopharynx. Any deviation from the normal may show pathogens in the nose. Embryologically the nasal sinuses develop from nasal mucosa and at birth only the ethmoids are present so that because of their position ethmoiditis is probably present in all cases of rhinitis or infection of any of the other paranasal sinuses.

The ethmoids are involved often in sinus infections with maxillary sinus involved not as frequent. The frontal sinuses are infected infrequently and the sphenoids very infrequently. I believe that with only sphenoiditis the patient should be investigated for diabetes.

Today, otolaryngologists see very few serious complications of sinusitis but many more patients than before with chronic diseases of the nose and sinuses. There are many reasons for this; resistant bacteria, greater amount of emotional tension, artificial temperature controls, increased use of drugs that effect the nose and sinuses and many other factors. Seen frequently also are patients who experience sudden changes in atmospheric pressure as in flying or swimming.

The Unexpected in New Drug Research

The most challenging problems in the field of drugs center mainly on diseases which are not yet clearly understood. The research efforts required for their resolution will entail basic understanding and a close integration of many disciplines. The problems still with us are difficult and complex. No one can state with certainty what the future holds. Indeed, in the field of research and new products we are often puzzled—or even astonished— at the least expected point.—Dr. Ernest H. Volwiler, former president, Abbott Laboratories, to Senate Subcommittee on Antitrust and Monopoly, Dec. 9, 1961.

Pulmonary Embolism: Obvious and Obscure

• Pulmonary embolism upon which the diagnosis is missed half the time is discussed by the author together with the pathogenesis, therapy, and prophylaxis.

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Introduction

WHEN a young man just recovering from mumps orchitis takes his first trip to the bathroom, clutches his chest, and dies; or when a hernioplasty patient on his eighth postoperative day has a sharp pleural pain in his chest, a brief episode of semishock and begins to cough up bloody sputum little doubt exists as to the diagnosis. Nevertheless, there are more and more reports of middle aged patients, perhaps with repeated episodes of "pneumonia", profound exertional dyspnea and fatigue, who have recurring emboli and chronic cor pulmonale and need ligation. There are increasing numbers of cardiacs with recurrent "disk like atelectasis" whose life span is markedly diminished by multiple emboli and who could be immeasurably benefited by anticoagulants.

In "sudden death" series 5 per cent of the cases are usually attributed to pulmonary emboli (as compared to 40 per cent from myocardial infarction).

In most "consecutive case" postmortem series, even on services where the staff is "pulmonary emboli conscious", at least one-half of all pulmonary emboli were undiagnosed before death. This is probably the only major well documented illness (except possibly poisoning) which is so often missed. Why this is so, will, I hope, be revealed by the remarks that follow. Reference will also be made to pathogenesis, therapy and prophylaxis.

Pathophysiology

As discussed in the excellent paper of Nelson and Smith, blood flows out of the right heart into the lungs under relatively low pressures (the mean is about 10 to 15 mm. of mercury) and the peripheral pulmonary resistance is also low and appears to be made up entirely or almost entirely of the arterioles. Most of the pulmonary vessels in the resting state are closed. The varying groups of the arterioles open and become widely patent under the increasing impetus of increasing output. As the output diminishes these groups of arterioles in a reverse fashion begin to close back down. Epinephrine, Norepinephrine and various types of sympathetic stimulation increase the critical closing pressure. Sympathetic denervation, Tetraethyl Ammonium Chloride or Hexamethonium decrease it.

Distal venous pressure makes little difference at normal levels but appears to contribute significantly to the total picture when it is high. Surface tension of the blood in the arterioles and tissue pressure also seem to be important in determining collapse or total closure of these vessels. With a constant cardiac output more than one-half of the vascular area of the lung can be excluded without an increase in the pulmonary arterial tension. The rise in resistance is chiefly related to arteriolar constriction by contraction of small helical bands of smooth muscle wound about the minute vessels. To cause an increase in the pulmonary arterial pressure from the obstruction of normal lung requires that 70 per cent of the lung be obstructed.

In congested lungs this figure is considerably reduced because the reserve is decreased by the engorgement. When the right or left main artery is externally occluded with clamps nothing much happens. When the same vessel is obstructed by pulmonary embolus, pulmonary hypertension ensues, systemic pressure falls, the

right heart dilates and failure occurs.

Mechanical obstruction does not explain all of the physiological responses of pulmonary embolization, and for this reason various theories have been advanced regarding the dynamics of the phenomenon. The rapidity with which the symptoms occur and the fact that death occasionally occurs where only small vessel obstruction was apparent at postmorten led to the initial theory that there was a reflex at work.

With reference to the postmortem findings there is reason to believe that perhaps small clots become dislodged at surgery or during the usual autopsy procedure or are masked by the presence of postmortem clotting. Sympathectomy and vagotomy do not alter the results of obstruction. Perhaps the strongest experimental evidence for the reflex theory was the fact that intravenous injection of starch granules, lycopodium spores, or barium sulfate into an isolated segment of lung often resulted in death to the animal. In opposition to this theory it must be noted that in vivo visualization showed that the arteries devoid of emboli were never reduced in diameter and the embolized vessel never showed a small diameter proximal to the plug and did so distally only if there was an absence of collateral circulation. More important, however, was the discovery that although the barium sulfate was deposited in only one segment, if the postmortem lungs were burned, barium ash was discovered scattered throughout both lungs, and when repeated injections caused increasing right heart failure and decreasing right ventricular pressure denervation of the lobe or using hexamethonium did not alter the pressure changes.

It is important that this reflex theory should be disproved completely since as long as there remains any doubt about its existence there will be justification for doing stellate ganglion blocks. There is increasing interest in the notion that most of these changes result from the liberation of humoral substances. If an aqueous extract of post-embolic rabbit lung is injected into a second rabbit, the second rabbit develops the symptoms and signs of pulmonary embolus.

In 1953, Comroe and his associates reported changes that occurred with the injection of five hydroxy-tryptamine which is analogous to Serotonin. The injection caused increased right ventricular pressure which was not abolished by vagotomy and presumably represented direct vasoconstrictive effects from somewhere in the pulmonary circulation. The pulmonary hypertension is not dependent on increased pulmonary blood flow or transpulmonary pressure but is directly related to constriction of the arterial system. Probably because of direct action on the smooth muscle, the drug induces a drop in the peripheral arterial oxygen saturation.

One observer thinks that Seratonin produces a fine white precipitate which causes transient small arterial embolization but this does not explain increased cardiac output. (It is also noteworthy that MAO inhibitors markedly increase Seratonin effect. It is doubtful that stopping these drugs would be of much use since it takes about three weeks to eliminate them from the body, but it is worth considering in a patient who is taking them when the symptoms of pulmonary embolism develop).

Histamine administration, duplicating platelet breakdown, acts primarily by constricting veins so it may enhance the peripheral vascular collapse, but it does not seem to provoke the pulmonary hypertension. Acetylcholine constricts pulmonary veins and is probably conducive to pulmonary edema.

The third theory is that hypoxia induces pulmonary arteriolar constriction. In this case the obstruction of the pulmonary artery causes an increase in pulmonary pressure, right ventricular failure, sharp drop in blood in the left ventricle with diminished cardiac output, diminished coronary flow, cardiac ischemia and cerebral anoxia.

Symptoms and Signs

With reference to the symptoms and signs of this illness, it might be helpful

at the outset to correct a tendency to equate embolism with infarction. Often embolism of a single major branch does not produce infarction. This depends on the size and consistency of the clot and the size of the vessel, the presence or absence of pulmonary congestion, the degree of obstruction, etc. The notion that the larger the embolus, the larger the infarct is totally wrong.

Let us begin with the findings of massive embolism. At least 20 per cent of these patients have symptoms that suggest a coronary occlusion. Ten per cent have precordial pain and 9 per cent have substernal pain with 4 per cent manifesting referral into the shoulder. Probably more of these patients would have coronary pain if shock, cerebral anoxia and insensitivity to the pain did not occur. The symptom is of grave prognostic significance.

The theories concerning its mechanism are as follows:

(1) A pulmonary coronary reflex arc through the vagus, theoretically the stimulation of vago-sensory nerve endings in an artery by an embolus causes reflex constriction of the coronaries with ischemia of heart muscle. There is good evidence however that vaga fibers to the coronaries are actually vasodilator fibers.

(2) Reflex constriction of other pulmonary vessels causes the main stem to dilate with tension on the arterial walls and the pain results from stimulation of sympathetic fibers in pulmonary arteries.

(3) Forward failure with ischemia is due to systemic shock, right ventricular dilatation and reflex vasoconstriction.

(4) Mechanical tension on the wall of the pulmonary artery. This theory is supported by (a) the fact that the pulmonary artery is always markedly dilated unless right heart failure has occurred; (b) afferent nerves in the adventitia of arterial walls definitely exist as is shown by clamping or puncturing arteries resulting in pain; (c) the presence of similar pain in dissecting aneurysms, migrainous headaches, rupture of the circle of Willis and femoral artery embolization, (d) the fact that at surgery palpation of the pulmonary artery produces a similar type of pain; (e) the fact that it is possible to pull on the walls of coronaries and cause this pain without any alternation in the flow through the coronary vessel.

It must be admitted that if 100 per cent of these patients get distended arteries and only 20 per cent of them get anginal pain, some other factors must be involved and apparently this depends on the percent of obstruction, the level of consciousness, the rapidity with which the obstruction occurs, etc.

In addition to the chest pain there is pallor and or cyanosis; a high percentage of the total blood volume is held back from the left ventricle, cardiac output drops, ischemia of the brain and heart follow but if the patient survives, stasis in the neck veins occurs from right ventricular failure with an increase in the CO_2 content and there is concurrent pallor and cyanosis, dyspnea (the brain suffers more quickly from anoxia than the heart so there is an immediate strong stimulus of the respiratory center resulting in characteristic deep forceful respiration), sweating, tachycardia and shock, nausea, chilliness, a sense of impending doom and a desire to defecate.

The physical signs have been divided by Gorham according to the genesis.

I. Those due to the distended pulmonary artery (and they might be less apparent if the right heart is too weak to maintain pressure or if the clot has already moved) include:

A. Pulsation in the left 2nd interspace, which can best be picked up by making ink marks and using a flashlight. (It is noteworthy that this is also seen in congenital heart disease, mitral stenosis, Ayerza's disease, and occasionally in normal thin chested individuals).

B. A P_2 which is louder than A_2. (Left ventricular failure also causes this finding but it, in addition, causes bilateral basilar rales and in pulmonary embolism the rales are usually present only in the area of an infarction.

C. Pseudo or pleuro-pericardial friction rub. (This may be difficult to differ-

entiate from the true pericardial friction rub of a myocardial infarction.

II. Those signs which are the result of the embolus itself include:

A. Systolic or diastolic murmurs in the left 2nd interspace caused by partial stenosis due to the embolus itself or in cases where the embolus extends back through the valve into the heart by either stenosis or insufficiency of the valve.

B. An interscapular systolic bruit.

C. A unilateral expansion lag with diminished breaths sounds.

III. Those signs due to pulmonary hypertension per se include:

A. Increased cardiac dullness to the right because of the dilated right heart.

B. Distended neck veins.

C. Increased venous pressure.

D. Reflex hepatojugulaire.

E. Gallop rhythm in the left 2nd and 3rd interspaces.

F. Hepatomegaly.

IV. Resulting from movement of the embolus, what is known as *"Die rote Blut Welle"* which results when, for brief periods, freshly oxygeneated blood gets to the left heart passed the clot and a red wave crosses the pale cyanotic face of the victim. Gorham feels that since at least 50 per cent of these patients live for more than fifteen minutes there is sufficient time to do an adequate physical examination and at least some of the above physical findings should be picked up.

The massive embolism patient may also, of course, present with cerebral symptoms secondary to the cerebral anoxia. Just as there is time for an adequate physical examination there may also be time for x-ray studies. The most prominent finding, especially apparent in the cardiac patients who have pulmonary congestion is an area of diminished density corresponding to the region of decreased vascularity. There is usually a leukocytosis.

The classical electrocardiographic changes described by White and others are right axis deviation with the appearance or deepening of S_1; the appearance or deepening of Q_{111}; the inversion or deepening of T_{111}, and inversion and deepening of T over the right ventricle. White suggests that this can best be found in the 4th intercostal space just left of the sternum or at a point half-way between that point and the midclavicular line rather than at V_4. Normally this T Wave is upright but in acute cor pulmonale with dilatation and right heart failure it is inverted. White and his associates mention that factors which obscure these EKG changes are deviation from normal caused by previous heart disease, the degree of the mechanical obstruction of the pulmonary circulation, the length of interval between the attack and the tracing, and the presence of other conditions which alter the EKG such as digitalis and the presence of abnormal rhythm.

When pulmonary embolism is associated with pulmonary infarction (and this usually implies a smaller clot since the massive embolism patient rarely survives long enough for infarction to develop) a quartet of classical findings have been described. These are pleural pain, bloody sputum, friction rub and evidence of phlebitis. A fifth, evidence of fluid, is occasionally added. It must be noted, however, that these findings occur in considerably less than all cases. The pain relates to the position of the infarct in the lung. The lung and visceral pleura have no pain fibers so the parietal pleura must be involved.

Usually the discomfort is over the ribs in the axillary area, occasionally along the costal margin or in the shoulder blade or neck. It has been clearly established that the pain is due to tension on the nerve ending of the parietal pleura attached to the intercostals rather than to actual friction between the two pleurae. The friction rub persists after the pain is gone or conversely the pain may be present when the friction rub is not. The intensity should be the same on inspiration and expiration if it were due to rub but actually the pain is absent on expiration. It should disappear when the breath is held but it persists until expiration begins. Strapping relieves the pain but under the fluoroscope the diaphragm continues to move and

basilar infarcts cause more pain because the lower interspaces separate more on inspiration.

With the stoppage of blood flow, the alveoli and capillaries become distended with red blood cells and a red infarct forms. It is from this source that the hemoptysis occurs. Because of the rapid anastomosis between pulmonary and bronchial vessels when obstruction occurs in the former, a patient who recovers undergoes red cell degeneration and the alvoeli walls develop coagulation necrosis and the area shrinks and scars over.

Additional findings include cyanosis, fever, tachycardia, tachypnea, and jaundice. It should be noted that many of these symptoms are also present in pneumonia accounting for some of the confusion that results. Probably over half of the "pneumonias" in elderly patients are really pulmonary infarctions.

The x-ray findings in pulmonary infarctions are thought of by the average physician as being typical pyramid shaped densities with the bases peripherally and the apices at the hilum. Unhappily this is rarely the case. The infarcts are quite irregular, the point of the triangle is rarely sharp. The shadows may be exactly like those of a pneumonitis and the reporting of disk-like atelectasis is a very frequent error. Where fluid is present it is apparent on the x-ray and the diaphragm may be elevated. There are no EKG changes attributable to pulmonary infarction per se.

Several special problems in diagnosis are worth commenting on. In one of White's articles he states that

"in recent years at the Massachusetts General Hospital an unexplained concommitant elevation of temperature, pulse and respiratory rate call for a meticulous search in an effort to rule in or out thromboembolic disease".

It cannot be emphasized too strongly that quite frequently localized physical findings are absent. There may be swelling of the leg or thigh with or without pain and/or tenderness. Bluish discoloration of the extremity may be present. There may be calf pain or lameness on walking and a positive Homan's sign. But probably the most valuable single diagnostic procedure

"is routine repeated measurements of circumference of the leg and thigh in patients with conditions which predisposed the development of thrombosis".

One of the greatest diagnostic dilemmas in this field is the occurrence, usually in middle aged men and women, of a picture whose course may extend from weeks to years of episodes of acute respiratory disease diagnosed as pneumonia followed by progressive dyspnea, markedly increased by exertion, aching chest pain also markedly increased by exertion and possibly associated with syncope and profound fatigue. These patients have a markedly accentuated, frequently doubled, pulmonary second sound, and an EKG which shows right ventricular hypertrophy, right bundle branch block and P Wave changes suggesting right auricular hypertrophy. Their x-rays show dilatation of the pulmonary conus and the hilar vessels with considerable reduction in the peripheral lung markings.

Finally, as stated by Carlotti, 60 per cent of pulmonary emboli are medical and not surgical patients and half of these are cardiacs. This is another frequent source of error. It might be mentioned that experimentally infarcts are much more readily produced in animals with previously induced pulmonary edema. In advanced right heart failure, especially from mitral stenosis, chronic cor pulmonale already exists, so that the reserve mentioned earlier is already constricted and a small infarction may produce the final fatal changes.

Prophylaxis

The prophylaxis of pulmonary embolism is of course the prophylaxis of thrombosis of the deep vessels of the lower extremities, except in the case of a chronic cardiac, in which case it is prophylaxis against right auricular clotting. Immobility following surgery, coronary occlusion or CVA is to be avoided. Sitting with relative immobility of the legs particularly when they are crossed or cramped so that the veins are occluded, abdominal

distention from obesity, pregnancy, abdominal binders or other obstructions from garters, trusses and varicosities must be eliminated wherever possible and congestive heart failure with slowing venous flow should be corrected, promptly.

Rapid diuresis in congestive heart failure may cause diminished plasma volume and increased blood viscosity and this must be kept in mind. Polycythemia and dehydration are also factors which tend to increase blood clotting. Unhappily bed exercises, early ambulation, elastic bandages and prophylactic superficial femoral vein ligation have not resulted in any decrease in the deaths. DeBakey discussed in an editorial the fact that where patients are given anticoagulants immediately postoperatively before leg vein pathology develops more patients died from hemorrhage than from emboli. He stated: "If the chances of death from the disease and from its method of prophylaxis are equal; one might readily choose the former since it is usually quicker and certainly cheaper".

Therapy

Therapy in the face of a massive pulmonary embolus is unsatisfactory. Oxygen and atropine are worth trying and there are advocates of papaverin although it seems to drop blood pressure. These patients rarely lend themselves to the immediate surgical removal of the clot. In the nonfatal embolus with infarction therapy is really prophylaxis against further infarction and it is divided into two techniques each of which has vocal advocates who unhappily are usually hostile towards each other. One hears "we abandoned surgery in favor of heparin years ago" about as often as one hears "anticoagulants are useless and the cava is no harder to tie than the femorals".

Both anticoagulant therapy and ligation have their indications and are often used quite successfully in the same patient. Where anticoagulants are used it is probably wisest to start with intravenous heparin followed by additional doses every four to eight hours and when the immediate danger is passed and discharge from the hospital is anticipated, therapy is changed to one of the coumarin drugs. If the surgery has been to the GU tract, joints, or brain, anticoagulant therapy is probably contraindicated. Where antagonists are needed heparin responds promptly to the intravenous administration of protamine, and Vitmain K1, intravenously, is usually effective against the coumarins, although fresh blood transfusions will give a more immediate response.

One of the advantages of ligation is the theoretical complete control of the danger and the elimination of the possibility of further emboli, especially in cardiac cases with complete or partial invalidism and myocardial failure with resulting peripheral circulatory stasis. It should be noted, however, that there is some evidence that clotting can occasionally occur proximal to the ligation and anticoagulant therapy is still necessary. When surgery is done it probably ought to involve bilateral common femoral ligation distal to the saphenofemoral junction and proximal to the profunda femoris. Inferior vena cava ligation just below the level of the renal veins represents considerably more serious surgery and should probably be reserved for patients in whom the other procedure fails or in the case of septic pelvic thrombophlebitis.

Bed rest probably should be imposed until there has been no evidence of further thromboembolism for two weeks. Venous stasis in the legs can be reduced by elevating the foot of the bed several inches and by using elastic bandages from ankle to groin. The administration of fibrinolytic agents intravenously is not yet considered a proven technique.

Summary

In summary to paraphrase Hickam and Siejer venous thromboembolism is hard to prevent, difficult to recognize and deadly if not treated.

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The Cold Bureaucratic Hand and Mind

The (Kefauver) Committee spent long and dreary hours bedeviling and belaboring the manufacturers for the way in which they spread the word concerning their new prescriptions. Admittedly, it's an expensive process. It has to be. They must tell the physician, individually, for he alone will do the prescribing. The United States medical profession is not a mass audience. It is 150,000 practitioners, each one dealing with individual cases of life and death. The doctor is told personally about new drugs, not by a salesman, but by a skilled and trained specialist. A new antibiotic, after all, is not a new flavor chewing gum. The physician must know such facts as dosage form, composition, indications, contraindications, and side effects, if any. The system not only introduces new drugs in the market place. It also happens to serve and protect the public interest—by which I mean the individual patient. But in any case, drug promotion is an industry matter far better handled by private industry, than by the stultified, cold bureautic hand and mind.—Senator Roman L. Hruska to annual meeting of the Drug Trading Company, Ltd., Toronto, Canada, May 2, 1962.

The Problem of Atypical Mycobacteria*

• A study of 59 patients in whom atypical mycobacteria were identified and classified as to group, distinct from Mycobacterium tuberculosis.

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ATYPICAL mycobacteria, distinct from *Mycobacterium tuberculosis* in virulence, cellular, colonial and cultural characteristics, have been identified in the sputum of an increasing number of patients. Investigations,[1-4] have shown that these acid fast bacteria may cause pulmonary disease which is clinically and roentgenologically indistinguishable from pulmonary tuberculosis, and which is generally more resistant to chemotherapy.

It is the purpose of this paper to review this aspect of the changing clinical picture of pulmonary disease as seen in one outpatient tuberculosis clinic. A unique opportunity to do this exists at the New Orleans Tuberculosis Clinic where a group of patients harboring atypical mycobacteria, have their roentgenograms, case histories and hospital records available for analysis.

Material and Methods

Atypical mycobacteria were identified in cultures of material obtained from 59 patients attending the New Orleans Tuberculosis Clinic. In 57 patients atypical mycobacteria were identified in sputum cultures; in one patient, a 12 year old Negro male, in cultures of gastric washings; and in the pleural fluid of a 51 year old White female with bronchogenic carcinoma. These atypical mycobacteria were classified into Group I (Photochromogens), Group II (Skotochromogens), Group III (Battey strain), Group IV (Rapid growers), based on cultural characteristics, cytochemical reactions, and virulence on animal inoculation.[5, 6]

Results

Incidence

With one exception, a 12 year old Negro male, the patients comprising this study were adults whose ages ranged from 21 to 78 years, (Table 1.) Forty-four (75 per cent) of the 50 patients were males. The patients were almost equally divided between Negroes (47 per cent) and Caucasians (53 per cent). This division was practically identical with the racial composition of the clinic. Atypical mycobacteria Groups I, and III, were the most common. Atypical mycobacteria Group 1 were identified in 22 patients (36 per cent) Group II, in 13 patients (21 per cent) Group III, in 22 patients (36 per cent) and Group IV, in 5 patients (7 per cent).

We divided these cases for purpose of analysis into:

A. Patients Previously Treated for Pulmonary Tuberculosis

Twenty eight patients had been treated for active pulmonary tuberculosis and had had typical *Mycobacterium tuberculosis* identified in three or more sputum cultures, prior to the identification of atypical mycobacteria. In 6 patients the presence of *Mycobacterium tuberculosis* had been confirmed by guinea pig inoculation.

All of the 28 patients had received antituberculous chemotherapy consisting of isoniazid, para aminosalicylic acid and, in most cases streptomycin, (Table 2). Seventeen patients received continuous antituberculous chemotherapy for eighteen months or longer; the major portion of this treatment was administered while

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* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 9, 1962.

From the Board of Health of the City of New Orleans and The New Orleans Tuberculosis Clinic, and the Department of Medicine, School of Medicine, Tulane University.

TABLE 1.
PATIENTS WITH ATYPICAL MYCOBACTERIA

Age	No. of Cases	Sex M	Sex F	Negro	Caucasian	Atypical Mycobacteria Group 1	2	3	4
11-20	1	1		1				1	
21-30	4	2	2	2	2	2		2	
31-40	14	10	4	8	6	7	3	4	1
41-50	15	11	4	7	8	5	3	8	
51-60	14	11	3	7	7	4	4	3	4
61-70	9	7	2	3	6	4	3	2	
71-80	2	2			2			2	
Total	59	44	15	28	31	22	13	22	5

the patient was hospitalized. In 6 patients the course of treatment was interrupted briefly; however, they had received at least twelve months of continuous therapy and the total duration of chemotherapy was more than eighteen months. Five patients received less than one year of continuous chemotherapy.

TABLE 2.

Age	No. of Cases	Chemotherapy* Adequate**	Adequate but Interrupted	Inadequate
20-30	3	1	2	
31-40	7	5		2
41-50	8	5	2	1
51-60	6	4	2	
61-70	3	2		1
71-80	1			1

* Prior to identification of atypical mycobacteria
** 18 months or more continuous chemotherapy

Eighteen patients, who were hospitalized during a portion of their treatment, had consistently negative sputum cultures when they left the hospital. Atypical mycobacteria were identified infrequently in these patients, not appearing consistently in serial sputum cultures. Their chest roentgenograms failed to show any change in the pulmonary lesions. Although atypical mycobacteria were identified in the serial sputum cultures of seven patients, their roentgenograms did not show any progression of the pulmonary disease, (Case No. 1).

Case No. 1. P.M. a 51 year old male, was hospitalized and treated for pulmonary tuberculosis in 1956. He received isoniazid, streptomycin and para aminosalicylic acid. The treatment was interrupted, and in 1959, fibrocavernous disease was noted within the left upper lobe. Sensitivity studies showed *Mycobacterium tuberculosis* resistant to isoniazid, para aminosalicylic acid and streptomycin. Viomycin and seromycin were given and a left upper lobectomy performed.

Following surgery, the pulmonary disease did not progress and *Mycobacterium tuberculosis* had not appeared in sputum cultures; however, atypical mycobacteria Group III have been identified consistently in the sputum cultures.

In one patient, (Case No. 2) previously treated for pulmonary tuberculosis, the presence of atypical mycobacteria Group I in serial sputum cultures was associated with progression of the pulmonary disease.

Case No. 2. V.B., a 47 year old male, was hospitalized because of an exudative infiltrate in the left upper lobe and sputum cultures which grew typical *Mycobacterium tuberculosis.* After two years of chemotherapy, his sputum cultures became negative and the serial chest roentgenograms showed no change in the fibrotic infiltrate in the left upper lobe, (Figure 1). For five years the sputum cultures were negative and the pulmonary lesion unchanged. Then a dense infiltrate was observed within the right upper lobe. Although chemotherapy was resumed, the pulmonary disease progressed and cavitation occurred, (Figure 2). *Mycobacterium tuberculosis* was not identified; however, atypical mycobacteria Group I consistently have been identified in serial sputum cultures.

Different groups of atypical mycobacteria were identified in successive sputum cultures making an exact etiologic diagnosis difficult in two patients, (Cases 3 and 4).

Case No. 3. G.B., a 46 year old male, was hospitalized after scout chest roentgenograms showed an infiltrate in the left upper lobe, and *Mycobacterium tuberculosis* was identified in three sputum cultures. He received chemotherapy until he deserted the hospital twenty-five months later. At that time his sputum cultures were negative. The pulmonary disease has progressed since he left the hospital although chemotherapy has been



Figure 1.—Residual fibrotic infiltrate left 2nd anterior interspace after two years of chemotherapy. The right lung appears within normal limits.



Figure 2.—Same patient as in Figure 1 five years after discontinuing chemotherapy. A cavitary lesion can be seen in the right lung. The microorganism now isolated is the photochromogen.

continued. Subsequently, atypical mycobacteria Group II and Group III and *Mycobacterium tuberculosis* have been identified in successive sputum cultures.

Case No. 4. V.T., a 48 year old negro female, was hospitalized after chest roentgenograms disclosed a fibroexudative infiltrate in the left upper lobe, and *Mycobacterium tuberculosis* was identified in sputum cultures. She responded to chemotherapy, and after two years the treatment was discontinued. For six years the pulmonary lesion was stable and the sputum cultures were negative. Then, the pulmonary disease extended and atypical mycobacteria Group I were identified in her sputum cultures. Although chemotherapy was resumed the pulmonary disease progressed and atypical mycobacteria Group I continued to appear in the sputum cultures, with the exception of two cultures in which *Mycobacterium tuberculosis* was identified. After a left upper lobectomy and linguilectomy, she improved and was discharged from the hospital with consistently negative sputum cultures (Figure 3). Subsequently,



Figure 3.—Five years after this patient had treatment discontinued for proven pulmonary tuberculosis, she showed radiological evidence of reactivation and the Group I microorganism was repeatedly isolated. Surgery was resorted to; however, we now have a Group II organism consistently isolated.

atypical mycobacteria Group II have been identified in her sputum cultures; the chest roentgenograms have shown no change in the pulmonary disease.

B. Patients not Previously Treated for Pulmonary Tuberculosis

Atypical mycobacteria were identified in 31 patients who had not previously had

sputum cultures of *Mycobacterium tuberculosis*, and had not received chemotherapy. Sixteen patients had been under lengthy medical observation by this clinic. They had apparently stable pulmonary lesions and consistently negative sputum cultures prior to the identification of atypical mycobacteria. Eleven patients were observed longer than three years and in five the period of observation was in excess of ten years, before atypical mycobacteria were identified in sputum cultures. Of the 31 patients, 16 had a history of intimate contact with some member of their family with active pulmonary tuberculosis, (Cases 5 and 6).

Case No. 5. R.M., a 57 year old male had a brother and sister who died as the result of pulmonary tuberculosis. He had been observed at this clinic since 1948. His serial chest roentgenograms showed unchanging fibrocalcific infiltrates in the right and left upper lobes and repeated sputum cultures were negative. In 1959, extension of the pulmonary disease was noted and atypical mycobacteria Group I subsequently were identified in serial sputum cultures. Atypical mycobacteria Group II were also identified, in one culture. Chemotherapy was administered; however, the pulmonary disease progressed, hemoptysis occurred and atypical mycobacteria Group I have continued to appear in the sputum.

Case No. 6. W.H., a 55 year old Negro male, had been observed since 1952, when scout chest roentgenograms disclosed a circumscribed density with central calcification adjacent to the left hilum, (Figure 4). He had lived with a brother-in-law who died from pulmonary tuberculosis. His chest roentgenograms were unchanged and the sputum cultures remained negative until 1959, when an infiltrate was observed within the apical posterior segment of the left upper lobe. Treatment was declined. The pulmonary lesion progressed (Figure 5) and atypical mycobacteria Group I have been identified consistently in sputum cultures.

In 13 patients the presence of atypical mycobacteria in the sputum was associated with stable pulmonary lesions, without clinical or roentgenological evidence of progression of the pulmonary disease. Also, atypical mycobacteria Group III were identified in the gastric content of a child who had no radiological evidence of pulmonary disease; and atypical mycobacteria Group I, in the pleural transudate of a woman with bronchogenic carcinoma.



Figure 4.—This tubercular granuloma had been observed for seven years. Patient had refused surgery and all sputa were consistently negative for typical microbacteria tuberculosis.



Figure 5.—Same patient as in Figure 4. Involvement of the left apical and subapical lung area with retraction of the previously noted tuberculoma cephalid. The sputa now demonstrate atypical microorganisms Group I.

Both were close contacts of proven cases of tuberculosis.

Sixteen patients had progressive pulmonary disease associated with atypical mycobacteria (Figures 6 and 7). One of these patients declined treatment and in three, the duration of chemotherapy (isoniazid, para aminosalicylic acid, pyridoxine and streptomycin) has been too brief to permit an evaluation. Twelve patients received chemotherapy for six months or longer, Table 3. Treatment has been effective (as manifested by sputum conversion or roentgenologic improvement) in seven patients (Figures 8 and 9). Five patients did not improve: two died, both had infections with atypical mycobacteria Group I, and both had received adrenal corticosteroids. Two patients had a close family relationship, Cases 7 and 9.

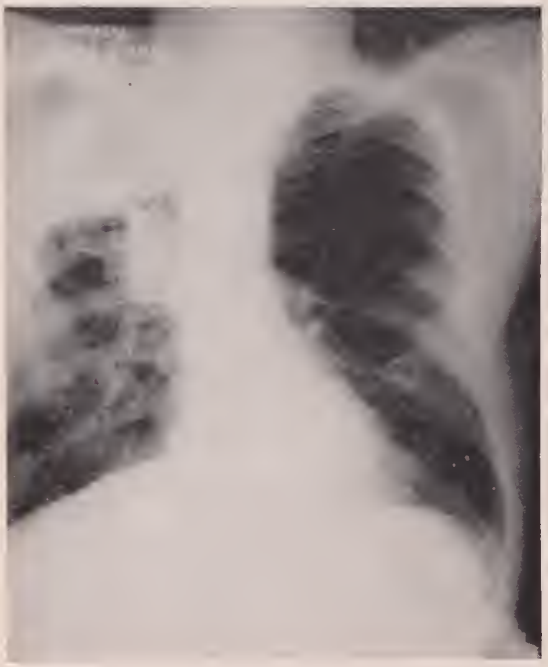


Figure 6.—Initial lesion demonstrated in this case was Group I Photochromogen. No previous treatment.



Figure 7.—Same as Figure 6 two months later. No treatment. Note progression of lesion.

Case No. 7. W.C., a 35 year old male, was referred to this clinic in 1960, after his chest roentgenograms disclosed a dense infiltrate in the right upper lobe. Atypical mycobacteria Group I were identified in repeated sputum cultures which failed to grow *Mycobacterium tuberculosis*. He was treated elsewhere with isoniazid, streptomycin and para-aminosalicylic acid. The pulmonary lesion remained unchanged and there was some clinical improvement until adrenal corticosteroids were administered. Then the pulmonary disease extended rapidly, cavitation occurred and his clinical conditioned worsened. He died three months later.



Figure 8.—Initial culture reported as Group I photochromogen. No previous treatment and an x-ray film (70 mm.) six months prior reported as negative.



Figure 9.—Same as Figure 8 six months after intensive antituberculosis therapy. Note the recession of the massive lesion.

Case No. 8. M.N., a 35 year old white female, was hospitalized after a scout chest roentgenogram disclosed fibrocavernous infiltrates in both upper lobes and atypical mycobacteria Group I had been identified in serial sputum cultures. She received prednisone, streptomycin, isoniazid and para-aminosalicylic acid; however, the pulmonary disease continued to progress and she died after one year of treatment. With the exception of one culture which contained atypical mycobacteria Group II, atypical mycobacteria Group I were identified consistently in sputum cultures.

Case No. 9. H.C., a 59 year old white male, the son-in-law of W.C. (Case 7) had three sisters, a brother and father with pulmonary tuberculosis. He was hospitalized in 1957, after chest roentgenograms showed a fibrocavernous infiltrate in the left upper lobe. Atypical mycobacteria Group III were identified in the sputum cultures and confirmed by animal inoculation, with the exception of one guinea pig inoculation in which *Mycobacterium tuberculosis* was identified. He received streptomycin, isoniazid and para-aminosalicylic acid; however, the pulmonary disease failed to respond and sensitivity studies showed the atypical mycobacteria Group III to be resistant. Surgery was recommended, but was declined. The disease has now extended to the other lung.

Comment

In this study, atypical mycobacteria were identified in three classes of persons. The first, comprised those previously treated for pulmonary tuberculosis. All had had *Mycobacterium tuberculosis* identified in sputum cultures prior to treatment and had been observed as non-active cases of pulmonary tuberculosis. Brief, inadequate anti-tuberculous chemotherapy did not appear to lead to the presence of atypical mycobacteria, since 23 (82 per cent) of the 28 patients treated had received chemotherapy for twelve months or longer. In one of these patients, the recurrence of extensive pulmonary disease was associated with atypical mycobacteria Group I. Atypical mycobacteria and *Mycobacterium tuberculosis* were identified in successive sputum cultures of two other patients with recurrent pulmonary disease.

The second class consisted of 16 patients not previously treated for pulmo-

TABLE 3.
PULMONARY DISEASE DUE TO ATYPICAL MYCOBACTERIA
RESULTS OF CHEMOTHERAPY

Age	Sex	Race		Atypical Mycobacteria Group	Sputum Conversion	Chest X-Ray Improvement
		Negro	Caucasian			
59	M		*	2, 3	No	No
36	F	*		1	Yes	Yes
34	M		*	1	Yes	Yes
45	M		*	2	Yes	No
42	M		*	1	Yes	Yes
46	M		*	1	No	Yes
68	M		*	1	No	No
57	M		*	2, 3	No	No
35	F		*	1	No	No
68	M		*	1	No	No
51	M	*		1	Yes	No
47	M		*	3	Yes	Yes

nary tuberculosis. They had stable pulmonary lesions and consistently negative sputum cultures prior to the identification of atypical mycobacteria. In 13 of these patients the presence of atypical mycobacteria was not associated with any discernable change in the pulmonary lesions. However, in three patients the atypical mycobacteria were associated with extension of the pulmonary disease.

The third class of patients had no previous history of pulmonary disease. In these patients atypical mycobacteria were associated with progressive pulmonary lesions and the microorganisms were identified in the early sputum cultures.

The patients with progressive pulmonary disease due to atypical mycobacteria Group I were generally more toxic, had higher temperatures and experienced a greater degree of debility and prostration than those whose pulmonary disease was caused by other atypical mycobacteria. The response to chemotherapy of the 12 patients with pulmonary disease caused by atypical mycobacteria, listed in Table 3, was more variable than might have been expected in a similar group with pulmonary tuberculosis. Five patients did not respond to chemotherapy. Two of these patients died; in both the pulmonary disease was associated with atypical mycobacteria Group I, and both had received adrenal corticosteroids. They were the only patients to receive adrenal steroids, which in one instance appeared clearly associated with rapid progression of the pulmonary disease.

In the past, chromogenic mycobacteria have been observed in patients with pulmonary disease; however, at present there appears to be a true increase in the number of patients harboring these organisms.[7-9] It has been noted that some atypical mycobacteria present morphologic, antigenic and other similarities with various strains of *Mycobacterium tuberculosis* and might represent mutations.[10-12] In this clinical study several factors supported this possibility. There was an unusually high incidence of intimate tuberculous contacts among the non-tuberculous patients with atypical mycobacteria (16 out of 31), and different strains of potentially pathogenic atypical mycobacteria together with *Mycobacterium tuberculosis* were identified in the successive sputum cultures of several patients. One patient, previously treated for proven pulmonary tuberculosis, had a recurrence of the pulmonary disease associated with the identification of atypical mycobacteria Group I in serial sputum cultures, in the absence of *Mycobacterium tuberculosis*. Also, 58 per cent of the patients, whose pulmonary disease was associated only with demonstrable atypical mycobacteria, responded promptly to a tuberculosis chemotherapy program.

Conclusions

1. Atypical mycobacteria, often associated with extensive pulmonary disease, are being identified in an increasing number of patients. The increase in the number of patients harboring atypical mycobacteria is both apparent and real.

2. The response to chemotherapy of patients with pulmonary disease due to atypical mycobacteria is variable, and as yet not completely evaluated. The use of adrenal corticosteroids should be deferred, pending further evaluation.

3. Patients with pulmonary disease due to atypical mycobacteria Group I generally had higher temperatures and experienced greater debility and prostration than those whose pulmonary disease was caused by other atypical mycobacteria.

4. In this study approximately 75 per cent of the patients with atypical mycobacteria either had pulmonary tuberculosis previously, or had been in intimate contact with proven cases of pulmonary tuberculosis.

5. The atypical mycobacteria may represent mutant organisms.

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We also wish to express thanks to the

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A Grateful Physician

There is obviously a great difference between academic investigation and the industrial research problems which must be solved before a new therapeutic substance can be produced in large amounts. Methods must be perfected and standardized. Large scale clinical tests must be organized and the results appraised. The product must be introduced to physicians and trustworthy information supplied to them. The ethical and competent promotion of a new and vitally necessary substance plays a very important role in the saving of lives. It is frequently very important to make drugs quickly and generally available. I am not competent to discuss the obvious financial risks which an industrial company must take under these conditions but there have been several occasions when I have been, as a physician and as a human being, profoundly grateful to them for accepting these risks.—Charles H. Best, M. D., Director, Banting and Best Department of Medical Research, University of Toronto, to Senate Subcommittee on Antitrust and Monopoly.

Untoward Effects of Surface and Local Anesthetics*

• The hazards of local anesthetics are gone into from every angle, and their misuse which may result in fatalities or near catastrophe.

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LOCAL anesthetics are among some of the most hazardous drugs used in medicine, yet they are often administered thoughtlessly, indiscriminately and with little knowledge of their applied pharmacology. Statistical data concerning the misuse of these drugs which has resulted in fatalities or near catastrophe are not available. By application of basic pharmacological principles and observing a number of well defined precautions one can obviate most difficulties arising from the use of injected or topically applied local anesthetics.

Toxicity

Toxicity from local anesthetics is either local or systemic. Many local anesthetics have been prepared and studied which were discarded because they caused irreversible changes in nerve and perineural tissues. Most of the accepted drugs in current use have withstood the test of time and if used as recommended are not locally toxic. One must remember, however, that local tissue damage may result from causes other than the drug. Contamination with a metallic substance, the addition of other drugs, particularly vasoconstrictors and noxious chemicals resulting from deterioration may cause local changes.

A local anesthetic only behaves as such when it is applied to nervous tissues. Systemically the responses are entirely different. High plasma levels are characterized by a train of symptoms often referred to as a reaction. Systemic toxic reactions then result only from an excess of drug in the circulating blood. Regardless of the site of application of a local anesthetic drug, it ultimately passes into the blood stream after which it is transported to the liver where it is detoxified or to the kidney where it is eliminated into the urine. The duration of neural blockade depends upon the duration of contact of the drug with the nerve fibre. Normally after the use of a local anesthetic topically or by injection the circulating blood level is much less than the level necessary for a reaction and no systemic effects are noted. When the plasma concentration exceeds the tolerable level symptoms of toxicity appear. Absorption is rapid from highly vascular areas. Plasma levels, for example, rise rapidly after injection into the scalp which has an excellent blood supply than it is from the cutaneous areas of the back where the blood supply is relatively speaking poor. Reactions, therefore, may be avoided by limiting the total quantity of drug used by using the most dilute effective concentration and by delaying absorption by the addition of vasoconstrictors.

Case histories of fatal reactions suggest that such reactions are most frequent after topical application of local anesthetics to the mucous membranes. This problem is an old one of such concern that in 1924, a commission was appointed by the American Medical Association to review the status of the drugs available at that time

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and to make recommendations concerning dosage and technique of use. Although the situation has improved considerably since submission of this commission's report, preventable deaths still occur. Seevers[1] has commented that more people die from local anesthetics than from any other group of drugs. This is probably an offhand statement without statistical backing, nonetheless it is not far fetched.

Blood Levels

Blood level studies following absorption of local anesthetics are not plentiful. Sufficient evidence is available which indicates that absorption from the mucous membranes is more rapid than it is from the subcutaneous tissues. Seevers and his co-workers[2] in their studies of the metabolism of cocaine, injected the drug subcutaneously, intravenously and into the stomach. They found little or no absorption from the stomach. They did not study absorption from surfaces where the drug is most often used clinically, such as the pharynx, larynx or trachea. Steinhaus and his associates[3] using indirect techniques demonstrated that absorption is rapid after intrapulmonic instillation. They relied on manifestations of overdosage as an index of absorption rather than plasma level determinations of the drug. In an earlier work from our own department[4] blood levels were studied following the topical application of tetracaine, cocaine and benzocaine to the pyriform fossa, trachea and bronchi of dogs. These were compared to levels obtained after rapid intravenous injection, slow intravenous infusion and infiltration into the subcutaneous tissue. All studies were made with a fixed weight of the drug. As might be expected, rapid intravenous injection resulted in an abrupt rise in blood level. A peak was attained in two minutes after which the level fell gradually. After subcutaneous infiltration the blood level was barely detectable. After topical application the blood level was one-third to one-half that obtained after rapid intravenous injection. The peak level was obtained within five minutes. Vasoconstrictors do not retard the absorption nor prolong the effect of the drug when it is applied topically. Vasoconstrictors do retard absorption when the drug is used subcutaneously. No difference in blood levels were noted when 2 per cent and 4 per cent tetracaine and 4 per cent and 10 per cent cocaine were used as long as the total number of milligrams applied to a given area was the same. It is generally accepted that 10 per cent is less toxic than the more dilute solutions because the concentrated solution has a more intense vasoconstrictor effect and retards absorption. Our studies of blood levels indicate that this is not so and that there is little difference between the two. Benzocaine crystals suspended in a 4 per cent or 10 per cent solution of cocaine applied topically was absorbed with equal rapidity. Had cocaine produced an intense vasoconstriction it would have retarded the absorption of the benzocaine.

Potency

The term potency applied to local anesthetics is not easily defined. Tetracaine is ten times more potent than procaine on a milligram for milligram basis. Thus, one milligram of tetracaine should produce the same degree of blockade as ten milligrams of procaine. On theoretical grounds one-tenth as much would be necessary. However, the duration of action of this quantity is twice as long as procaine. Potency and duration of action do not parallel each other. Ordinarily, one gram of procaine is the maximum quantity recommended for infiltration and perineural injection in an adult. On such a basis it follows that 100 mgms. of tetracaine is the maximum to use for infiltration. This, however, does not apply when tetracaine is applied topically because the absorption from the mucous membranes is more rapid than it is after subcutaneous injection. The total quantity, therefore, should be less than that recommended for infiltration or perineural injection. How much less is difficult to say since it depends upon the area and vascularity of the mucous surface to which the drug is applied. Cocaine is approximately five times more toxic than

procaine when injected intravenously into animals. On theoretical grounds the maximum amounts of cocaine that should be used at any one time should not exceed 200 mgms. The dictum "use the least amount of the most dilute solution to obtain effective anesthesia" is the best one to follow when using a local anesthetic by any route.

Each drug has a latent or lag period which extends from the moment a drug is applied to a given area until the effect is fully established. This is especially important when anesthetics such as cocaine and tetracaine are applied topically to the mucous membranes. Often as many as five minutes may elapse before anesthesia is fully established. Some clinicians, unaware of this latent period, become impatient and begin surgical manipulations before anesthesia is fully established. The anesthesia is usually inadequate and a second application and even a third application is often made. It can be seen how such a practice readily leads to overdosage. As a rule the longer lasting drugs manifest a longer latent period.

Overdosage

Symptoms of overdosage are manifested in the nervous or the vascular systems or both. Most physicians are aware of the effects of overdosage of local anesthetics on the central nervous system. They are less familiar with the effects on the circulatory system. Usually one system or the other is affected but both systems may be involved simultaneously. The central nervous system appears to be affected more frequently than the vascular system. The majority of local anesthetics, even though they differ chemically, are similar pharmacologically in both their local and in their systemic effects. An abrupt rise in blood concentration above the toxic level causes stimulation of the nervous system resulting in convulsions. The stimulation is usually described as being from above downward, with the cortex being affected first, the subcortical centers next, the midbrain next and finally the medulla. However, with some drugs medullary depression characterized by respiratory failure may occur simultaneously with convulsions. Excitement, apprehension, disorientation, nausea and vomiting may precede the convulsions. Frequently these prodromal symptoms are termed hysteria by physicians who are not familiar with symptoms of toxicity. The severity and duration of the convulsions vary with the quantity used, the rapidity of absorption and the susceptibility of the patient to the drug. Massive amounts infused intravenously cause fleeting convulsive manifestations which are followed by a paralytic or depressed phase. The paralytic phase is characterized by coma, a reflexia, apnea and circulatory failure. The convulsions are usually short-lived, seldom lasting more than several minutes. Convulsions may be controlled by the administration of oxygen by mask and by the injection of central nervous system depressants. Ultra short acting barbiturates are the most serviceable of this group of drugs since they are rapid acting. Thiopental (Pentothal), hexobarbital (Evipal), thiamylal (Surital) and methohexital (Brevital) are used for surgical anesthesia and are, therefore, usually immediately available in the operating room. Secobarbital (Seconal), pentobarbital (Nembutal) or amobarbital (Amytal) are preferable for office or out-patient use. These are available for immediate injection in sealed ampules. Thiopental and other ultra short acting barbiturates are dispensed in powdered form and valuable time may be consumed in preparing solutions. A three or four minute latent period precedes the peak of action of most short acting barbiturates. An estimated dose is administered intravenously and, then, sufficient time is allowed for the drug to act before an additional quantity is injected.

During this latent interval excitement and convulsions may persist. Additional quantity of the barbiturate must be withheld until one is certain that more is needed. Barbiturate overdosage may result if administration is continued during this latent period. Often the convulsions

subside before one has the opportunity to administer the barbiturate. Barbiturates merely antagonize the central nervous system stimulation caused by these drugs. They should not be used for any reaction manifested by depression, coma, respiratory or circulatory failure. Barbiturates do not neutralize local anesthetics nor do they hasten their detoxification or elimination. Long acting barbiturates such as barbital, phenobarbital, butobarbital (Butisol) are less effective than the short acting and should be used only when more potent and rapid acting compounds are not available. Other hypnotics, such as chloral, tribromethanol, paraldehyde and the narcotics are not clinically suitable as antagonists. The central nervous system stimulation may merge into a depressed phase manifested by a comatose state, apnea and circulatory failure. Artificial respiration by mouth to mouth breathing or any other immediately available method must be instituted immediately under these circumstances.

A depressed state may develop without excitement or convulsions after absorption of certain drugs. Lidocaine (Xylocaine), for example, causes a drowsy state which is frequently accompanied by amnesia. After the rapid absorption of tetracaine a coma-like state may occur. Central nervous system depression occurring without convulsions, respiratory depression and changes in pulse or blood pressure requires no therapy except watchful waiting until the symptoms disappear. Convulsions which persist for hours after the use of a local anesthetic are not due to the drug. Convulsions occurring postoperatively after a local anesthetic has been used are caused by factors other than the local anesthetic. Reactions due to local anesthetics usually develop within the first fifteen minutes after injection.

Circulatory Reactons

Local anesthetics decrease cardiac output by depressing the myocardium thereby giving rise to the circulatory type of reaction. They may also cause local vasodilatation which gives rise to varying degrees of hypotension. An extreme degree of hypotension may be due to a combination of both cardiac depression and vasodilatation. Myocardial depression without vasodilatation is usually characterized by a bradycardia, a lowered systolic blood pressure and reduced pulse pressure. Vasodilatation causes a decrease in systolic, diastolic and pulse pressures.

The onset of the circulatory type of reaction may be abrupt. Pallor, tachycardia, syncope and complete disappearance of the pulse and blood pressure may suddenly occur when the reaction is severe. The onset of the less severe reactions is slower and the circulatory system deteriorates gradually. The patient may become drowsy and gradually pass into a coma-like state. Such reactions have been erroneously termed as "idiosyncrasy" or "sensitivity." They are, however, caused by overdosage from failure to observe basic principles and precautions outlined for using local anesthetics. Vasopressors (ephedrine, desoxyephedrine, methoxamine or phenylephrine) administered slowly intravenously overcome the hypotension. When the circulation appears to have failed completely and cardiac arrest is suspected, external cardiac massage simultaneously with artificial respiration is indicated without delay. Circulatory depression occurs more readily and more frequently in patients who are debilitated, in those who have cardiovascular disease or after the administration of local anesthetics for prophylaxis for cardiac arrhythmias during surgery or for other purposes. In debilitated and acutely ill subjects the reaction may be due to the combined effects of the drug on the nervous and the vascular systems. The circulatory failure may be enhanced by the anoxia resulting from the convulsions, resulting from the reaction or from an obstructed airway or laryngeal spasm which may occasionally occur during a reaction.

Intolerance

Not all reactions occurring during the use of local anesthetics, however, are due to overdosage. Certain patients are intol-

erant to drugs. Local anesthetics are no exception. When a patient is intolerant to a drug the average therapeutic dose causes an exaggerated response. In the case of local anesthetics, a circulatory or central nervous system reaction follows the use of less than the usual therapeutic dose. Usually, a reaction due to intolerance to local anesthetics is characterized by circulatory depression rather than central nervous system stimulation. Such reactions are erroneously ascribed to idiosyncrasy or sensitivity. The treatment is the same as that described for overdosage.

Allergic reactions follow acquired sensitization to repeated exposures to a drug. The response is that of the antigen-antibody type. The drug combines with the body proteins and becomes antigenic. Cutaneous lesions, urticaria, laryngeal edema, swelling of the tongue or bronchial spasm may appear after contact with the offending agent. Physicians and dentists develop allergic reactions as an occupational disease. Usually a number of repeated exposures are necessary for "sensitization." Patients exposed only once or twice to local anesthetic drugs seldom become sensitized.

Certain individuals manifest a reaction which, for want of a better name, is called the anaphylactoid type of reaction. Fortunately this type of reaction is extremely rare. In these cases a minute quantity of a drug induces sudden syncope which invariably is followed by death. The patient may never have had previous exposure to the drug.

Stress is often placed upon tests for sensitivity. The use of the intradermal wheal to prognosticate an abnormal response to a local anesthetic is a traditional procedure of doubtful value. Areas of erythema are often confused with pseudopod formation. The test, therefore, is difficult to interpret if it is positive. Intolerance has been encountered even though the skin test has been found to be negative. At times nothing has happened if the drug has been used in the face of a positive response. Patients with a history of syncope following injection of a local anesthetic should be studied before a local anesthetic drug is used once again. Patients intolerant to a drug, for example, one derived from paraminobenzoic acid such as tetracaine may also be intolerant to other derivatives of the same acid, such as procaine. Patients intolerant to drugs in one chemical group may tolerate drugs in other groups. A patient intolerant to procaine may be tolerant to hexylcaine which is chemically different since it is derived from benzoic acid.

A test which has a more logical basis than the skin test and which gives more precise information, particularly as to whether or not intolerance exists, is the intranasal test. A base line of pulse and blood pressure values is first obtained by making observations at two or three minute intervals for approximately ten minutes with the patient reclining. One drop of the solution to be used is then instilled into either nostril or sublingually. The pulse and blood pressure readings are recorded at one minute intervals for the next several minutes. After three minutes two drops are instilled and the effects noted for three minutes more. Then four drops, then eight, then sixteen are tried. Bradycardia, hypotension, excitement, tremors or nausea are usually indicative of intolerance. When testing a highly reactive patient the test dose, even though it is minute, be it administered intradermally or placed on the mucous membrane, may precipitate a severe anaphylactoid reaction which may terminate fatally. Thus, in a truly sensitive patient death may result from the quantity needed for the test. Fortunately this type of response is extremely uncommon.

Unrelated Reactions

Some reactions are in no way related to the drug used. The side actions of epinephrine may be mistakenly ascribed to the local anesthetic. Pallor, tachycardia, or tremor and excitment caused by epinephrine may be confused with the prodromal signs of a nervous system reaction. The differentiation is not difficult to make because epinephrine does not cause con-

vulsions, twitchings or disorientation. The blood pressure is markedly elevated and the pulse rate is accelerated, however. Pulmonary, fat or air emboli, coronary occlusion or cerebral vascular accidents may occur coincidental to the use of a local anesthetic drug during an operation. The resulting clinical picture is often mistaken for a drug reaction by clinicians unfamiliar with the systemic behavior of local anesthetics. Convulsions which persist after administration of a barbiturate or reappear at periodic intervals after the use of local anesthetic drugs are due to some cause other than the drug.

Summary

Reactions from local anesthetics are due to generous use of these drugs as a rule. Reactions following topical application occur more frequently than they do after perineural injection. Reactions are the result of high plasma levels and can be avoided by using the most dilute effective concentration and limiting the total quantity used.

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New Drugs in the Cold War

We are now engaged in what is probably the greatest struggle between nations in all history. We call it the Cold War. It is a war that requires our efforts in many fields. In some, we have been most successful. One of these is the improved treatment of diseases. New drugs are an important factor in our success in this area. Our excellence in the treatment of disease may very well be decisive to the ultimate outcome. Surely our efforts should be directed to maintaining and increasing our leadership. This is no time for legislative changes that even create a possibility of retarding our continued progress. S. 1552 (Kefauver Bill) not only entails such a possibility but, in my judgment, would almost certainly do precisely this.—Lowell T. Coggeshall, M. D., Vice President, University of Chicago, to Senate Subcommittee on Antitrust and Monopoly.

The Value of Hypnosis in Obstetrics

• A most interesting report upon hypnosis used in labor on the unwed mother.

JACK A. ANDONIE, M. D.
New Orleans

THERE are many pros and cons concerning matters which provoke discussion on the almost mysterious subject of hypnosis. This subject is not well understood by medical, as well as, and especially, nonmedical people. The value of the use of hypnosis in any field of medicine is very controversial. To be presented here are observations on the value of hypnosis in only one field—that of obstetrics.

Since hypnosis is a state of altered consciousness in which the suggestibility of the subject is greatly increased, and since the sensations, including pain, which are experienced by women undergoing childbirth are subjective, hypnosis may be used to eliminate or greatly reduce these subjective sensations.

The way in which the opinion of the writer as presented in this paper was formulated, and the circumstances involved in its formulation are somewhat unusual and need to be discussed and emphasized.

Source of Material

An understanding of how and why material for this paper was obtained is important.

The writer obtained an externship at Methodist Home Hospital, a home for unwed mothers in New Orleans. Shortly after his arrival, it was found that there were two forms of anesthesia used there for delivery — general anesthesia and spinal anesthesia. Apparently, someone had recently suffered from the occasional side effects of spinal anesthesia (severe spinal headaches and symptoms of meningeal irritation), and all of the patients were aware of this and, therefore, considerably frightened by its use. Also, it was apparent that a nurse anesthetist could not always be obtained to give the general anesthesia. This led some of the patients to inquire about hypnosis.

Since the writer had used hypnosis prior to this time, only on a relatively small scale, advice was sought. The opportunity for extensive utilization was apparent. Brief conferences concerning the subject were obtained with Drs. Carl Davis and Genevieve Arneson of the Psychiatry Department of L.S.U. They explained some aspects of hypnosis, such as, pitfalls in its use, possible complications, contraindications to its use. They then advised its use be undertaken as actual practice and application of the things discussed.

Preparation of the Group

The chapter on technique involving obstetrical patients in Wolberg was followed. At first, because of the time element involved, group conditioning was used. Later it was realized by actual use that much better results were obtained with individual conditioning and this method was adopted.

Of course, before proceeding to condition anyone, all questions asked about hypnosis were answered and, as thorough an explanation of hypnosis as possible was given to all patients. Many misunderstandings and false concepts concerning hypnosis were corrected. As time went on, along with the explanations, demonstrations with an experienced subject were given for all new patients.

The procedures followed were regarded as classical in the field and will not be discussed. Techniques were developed according to the personality types. Some techniques worked successfully with some, and had to be changed for others. There were only 1 or 2 patients in each group

(25 to 35 girls) that were not susceptible to hypnosis for various reasons. Some of the various types of techniques employed were those of muscle relaxation, ideosensory, tension techniques, etc.

Many types of challenges were utilized in order not only to take the patient into a deeper trance but also to test the depth of the trance. The following challenges indicate the depth of the trance in somewhat the following order: eye catalepsy, limb catalepsy, hyperesthesia and anesthesia, opening of eyes and talking during the trance, positive and negative visual, auditory and tactile hallucinations and posthypnotic suggestions, including amnesia.

Preparation of the Individual Patient

Conditioning for the actual labor and delivery included the following suggestions in a much more amplified manner:

1. It will be a very pleasant experience.
2. There will be no pain associated with your contractions.
3. You will pay no attention to any activities outside of your own and the doctor's.
4. An attempt to explain the type of sensations felt with early and late contractions was made in the form of suggestions, i.e., "bearing down contractions indicate the baby is here so you await its arrival with great anticipation."
5. The patient was told that sensations of pressure will be present, but "you approve of these because they indicate the degree of progress and the imminence of the delivery period." These sensations were explained in much detail, i.e., "you will feel as if you have to have a bowel movement, empty your bladder, or feel as if your tissues are being stretched, pulled or pushed."
6. Each contraction is a signal to go deeper and you look forward to the next contraction.
7. Numbness in the area of the episiotomy is suggested and tested while patient is in labor and immediately after a pelvic examination.
8. After delivery you will sleep until you feel completely rested.
9. If amnesia is desirable to the patient, it, too, is suggested.

Eventually, auto-hypnosis is taught to the patient. With this tool they practice and can become very proficient at rapid and deep induction.

Patient Delivery Experience

Perhaps a few of the experiences with hypnosis should be related. All of the patients were primigravidas. The amount of sedation prior to delivery varied with the length of labor and the type of patient. The dosages without the use of hypnosis varied from 100 to 250 mgm. of Demerol. Below are the results of 3 out of 10 patients that the writer considered to be the *very* successful. The rest of the experiences varied from successful to a few (seemingly) absolute failures. The reasons for some of the failures will be considered later.

The names used are the house names assigned the patients.

1. Amy—This was the writer's first subject. She, unfortunately, delivered while the writer was at a Military Hospital 600 miles away. She wrote of her experience. This probably best explains the results:

"Dr. Bowers, a resident at Baptist, attended me and through the whole delivery all he could say was, 'I've never seen anything like this!' and 'I can't believe this!' After he realized that I indeed was in complete control of myself, he just about let me have my own way. I asked him if he wouldn't strap my hands if I promised to be careful and he said he saw no reason to. I delivered at 9:03 p.m. and the nurse was still telling me to calm down at 8:45 because I wasn't about to deliver until tomorrow afternoon sometime! 'You aren't having any pains yet, they have to be twice that bad before you even begin to do something!' These were her exact words when I felt the baby's head go through the cervix! She walked out and wasn't even going to examine me until I threatened to have the baby right there in the labor room. *Then* she called Dr. Bowers. I was having bearing down contractions before she made it to the phone. After talking to the doctor she decided I must need a shot for the great pain I must be in. This I quite refused, at the top of my voice. I went the whole thing on your posthypnotic suggestions and had no pains at all with my contractions and only two extremely uncomfortable

pressure pains. Everything else was almost a breeze. Dr. Bowers told Dr. Kimmerly that I had done it all. Dr. Kimmerly seemed quite surprised to me that it worked at all. Congratulations good Doctor! You really should be here taking your bows. Everything went according to your instructions and all worked perfectly. Even ————, a nurse, is singing the praises of hypnosis and Mrs. ————, another nurse, is still speechless, but is pushing it. What matters most, however, is the impression it made on most of the girls."

This first patient was a tremendous boost to the other patients. How well the patient would have done without posthypnotic suggestions is not known and cannot be estimated. Regardless of their actual effect, it gave confidence to the other patients and stimulated the writer to continue on a larger scale. The sections of the letter concerning the nurses were allowed to be printed in order that a very important point be made further on.

2. Nancy—This was a 19 year old patient who was an excellent subject. She went through a painless labor without sedation, up until the last half hour before delivery. She was then completely dilated and at a +3 station. Only 50 mgm. of Demerol were needed and administered. She remained in a trance throughout the experience.

3. Mitzi—This one was a 16 year old patient who came into the Home only four days prior to delivery. After going in late labor she complained of severe pain. Asked if she were willing to try hypnosis, she answered, "Anything." She was immediately inducted and remained "asleep" without pain throughout the rest of the experience. No sedation needed!

Discussion

In order to evaluate the actual value of hypnosis, three aspects of its use in this study must be considered. These are (1) the disadvantages in general, (2) the writer's results related to the circumstances in which the study was done and (3) the advantages in general.

First, the disadvantages. I have found only two: (a) Not all patients are able to use it. Some simply are not amenable to such suggestions, (b) It takes time—a great amount of time. This is probably the principal reason why physicians either do not use hypnosis or more than likely, refuse to bother learning the use of hypnosis. As one prominent physician who used hypnosis quite often stated, "From my standpoint, as you mentioned—time. I am jealous of every minute it (hypnosis) robs me of."

Other disadvantages have developed in my conversations with experienced obstetricians and psychiatrists. Possibility of (1) over-dependence on the part of the patient, (2) possibility of precipitating a psychosis or, (3) possibility of adding new anxieties to the patient.

In this series of observations with more than 100 patients, the first two disadvantages were not noted. Occasionally, only very minor anxiety was aroused, and this was not permanent.

Here the writer feels that, perhaps, the reason he encountered none of these serious reactions is the selectivity of the patients, the limited use of hypnosis to one area, and avoidance of dangerous procedures as age regression.

Results in This Series

The second aspect is the writer's results. Approximately, 1 out of 7 patients have gone through the experience in a completely successful fashion. From conferring with very experienced physicians, two obstetricians, who have used hypnosis for many years, and two psychiatrists, I have learned that one out of five should have done as well as desired. Why then, were results here not as good. Below are several possibilities, most of which are peculiar to the circumstances under which the study was done:

1. The inexperience of the hypnotist. At first it was all trial and error in regard to techniques to be used, using the patients' reactions to advantage, etc.

2. Any patient who showed any discomfort or any evidence of something "going wrong", was not used. This, however, only happened in 4 patients. Later, it was learned that the patient's discomfort or peculiar activity, with the exception of

one patient, was within normal limits and they probably would have made excellent subjects.

3. The hypnotist was an extern. He had a resident, his superior, who did not use hypnosis and cared very little for it. The patients knew this, and the possibility of practicing without seeing the actual results was entertained and expressed frequently by them. It was only after signs of some success with the method that more flexibility was allowed, such as permitting the writer to sedate the patients when he thought they should be and not when he (the resident) thought the time for sedation was proper. It took time in order to obtain this and many more liberties essentially needed in the use of hypnosis.

The patients always knew sedation was readily available to them and on occasion the hypnotist gave sedation contrary to the wish of the patient. Hypnosis was used for the relief of pain—not as a toy, the result of which would be pain.

4. The nurses had no training in handling hypnotized patients. Had the writer taken time to train them in this matter, their assistance would have added significantly to the results. This was clearly pointed out in the above quoted letter.

5. Many of the patients who received sedation within two hours of delivery could have delivered without a general or spinal anesthesia in the opinion of the writer. However, no consideration to this possibility was given and the anesthesia was given.

August, states that he usually needed some sedation, just prior to delivery, and, as a result of this sedation, no anesthetic was needed. He often gave 50 mgm. of Demerol just prior to delivery. This was not tried in the circumstances in which these observations were concluded.

6. The most important factor is the patient herself. It must be remembered she is an unwed mother with tremendous emotional problems. This cannot be emphasized enough.

All were primigravidas with the fears and anxieties of a woman having her first, but, making things worse, without a husband or family, to help them at this crucial time. They often faced insecurity and loneliness after leaving, and knowing this, the delivery was something **not** to look forward to. Also, the delivery is usually not a joyful event because they know that immediately after the delivery they must face the very enormous problem of giving up their baby. This is extremely hard and painful.

The problems which the women have were impressive, as often their histories were heard in detail. The results would obviously have been much more successful had the birth of the child been a joyful and eagerly anticipated event. In the case of a married patient, she could occupy her spare time with practicing hypnosis along with other such pleasant doings. At the Home, however, the emotional background was anything but joyful as mentioned above, and the patient's mind was apt to be preoccupied with her serious problems and not with practicing hypnosis.

Considering the environment and circumstances under which the study was carried out, the writer feels fortunate to have achieved any success at all! A great number of failures could have been anticipated.

Advantages

The third aspect concerning its value is the actual advantages.

1. It gave the patient something to work for, look forward to, brag about. An atmosphere of hope is needed. This, at least temporarily, helped the patient to "leave her problems behind."

2. The patients relaxed much more during labor by the use of hypnosis, and thereby may have even shortened the labor itself. This, according to a noted psychiatrist, has been confirmed.

3. There was much less fear, apprehension and anxiety. Many observers were sincerely fooled thinking the patient to be "asleep" or "not in labor" because of the quiet, well-controlled expression of the patients. They truly appeared "asleep" and "without a care."

4. Less sedation was used. If for no other reason, this was best for the baby. It is suggested that this also was of benefit to the mother.

5. Less pain or greater pain tolerance. This was obvious. To prove the difference, the following was observed several times: the patient was hypnotized only when she really needed relief of pain. After being hypnotized she no longer needed sedation and this usually lasted for several hours or until the actual delivery. Also, when for any reason the patient's trance state was to be terminated, she was given sedation fifteen to thirty minutes prior to the actual termination of the trance. Then, it was noticed that the first contraction experienced outside of the trance state was apparently much more painful than the last contraction experienced before the trance state was terminated, only seconds before. The patients readily admitted the difference.

6. The most important advantage is the amazing patient-doctor rapport that can be established. Through the use of hypnosis the patients learned to trust, believe in, and confide in the hypnotist. They usually did not hesitate to ask for help. Most of the patients sought help at one time or the other—generally just prior to going home. This gave the writer the opportunity he needed to try to help them. Undeniable advantages are that:

7. There have been **no** deaths reported from the use of hypnosis.

8. The physiology of the patient is usually unaltered in any way.

9. The fetus receives no substances which could be responsible for causing a "sleepy" baby.

Conclusion

It is apparent that there are advantages and disadvantages in the use of hypnosis in obstetrics. In selected cases it can be of significant value to the patient and to the doctor, as observed in this study.

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From Test Tube to Bedside

Each year the pharmaceutical industry in this country makes, discovers or synthesizes more than 100,000 chemical compounds or substances. Of these perhaps about 2500 to 2800 may reach the stage of investigation to determine their usefulness in humans. And of this latter number perhaps 30 to 40 may eventually appear on the market. Incidentally, to undertake this huge job of searching and testing there are more than 16,000 scientific personnel employed by the pharmaceutical industry. And about 5 to 6 years, as an average, intervene from the time an idea is discovered in a test-tube and when it finally emerges for general use in sick people.—Austin Smith, M. D., in **Military Medicine**, March 1962.

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Editorial

Differentiation of Esophageal Pain From Angina Pectoris

The differentiation of angina pectoris from the symptoms of esophagitis may be difficult. When both conditions exist the recognition of what portions of the symptom complex are due to the two conditions is even more difficult. An investigation of this problem and a review of the literature pertaining to it is presented in a highly instructive paper by Bernstein, Fruin and Pacini.[1] The authors consider, with extensive backing in the literature, that angina pectoris has as its essence a history of chest pain on exertion which is relieved by rest. They consider less important other criteria such as relief of pain with nitroglycerin and the onset of pain associated with excitement, agitation, heavy meals and exposure to cold and wind. The mechanism of angina decubitus in patients without exertional dyspnea is regarded as unexplained.

Objective evidence of heart disease increases the confidence with which the diagnosis of angina pectoris is made, but is not critical to the diagnosis. The existence of the cardinal features of heart disease does not necessarily indicate that the patient's symptoms are of cardiac origin. It is recognized that patients may have asymptomatic heart disease and symptoms of other diseases. The relationship of anginal symptoms with objective evidence of heart disease is not rigorous: either may be present without the other. When angina is felt to exist and there are no clinical and laboratory findings of heart disease it is thought that organic disease of the heart does exist but evades clinical and laboratory recognition in the present state of our knowledge.

The sensations connected with an attack of angina have many descriptions. The disturbing symptom may not be called pain but the location is most commonly substernal and may radiate to left or right chest, shoulder, arm, hand, up-

per abdomen, back, neck, jaw, teeth or face or any combination of these. Delineation of esophageal symptoms has been accomplished with some difficulty. It has been arrived at by clinical studies of patients with esophageal disease and by a method developed by the authors which was valuable in producing and clarifying the significance of symptoms. The authors state "generally a history is accepted as that of esophageal disease (usually esophagitis and/or hiatus hernia) if pain and/or burning is experienced repeatedly in the substernal region at any level from the xiphoid to the suprasternal notch in or near the midline, is brought on or aggravated by spicy foods, is relieved by antacids, is not related to exertion, and is initiated or increased in severity by recumbency and relieved by the upright position". The fewer of these symptoms found to exist, the less secure is the diagnosis of esophagitis.

Endoscopic examination may reveal inflammatory changes of the esophageal mucosa but its absence does not rule out the esophageal origin of symptoms. The authors suggest that in man, one cannot exclude the possibility that reflux of gastric contents into the esophagus acts as a nonspecific irritant, and elicits symptoms of esophagitis due to some other unknown cause.

It is evident that there is considerable similarity of the character and distribution of angina and esophageal symptoms. The authors remark that exertional pain, the essence of angina, occurs in some patients with esophagitis or hiatus hernia. Heartburn with exertion is described in some patients after a heavy meal. Nitroglycerin relieves esophageal pain sometimes, though not invariably.

The distinctive recognition of these two conditions is also made difficult by their similarities with symptoms originating in other diseased organs. Various diseases of the organs in the upper abdominal cavity may simulate angina and also simulate esophagitis.

Study of the literature suggested to the authors analogy that angina pectoris is to organic heart disease as esophageal pain is to esophagitis. The two sets of symptoms may or may not be typical and may overlap. It was found that prolonged perfusion of the esophageal mucosa with 0.1 N HCl elicited chest and abdominal symptoms of esophageal origin. The procedure was to perfuse the esophagus, a plastic tube placed in the esophagus, changing the perfusing fluid at will and without the patient being able to recognize the change except as manifested in symptoms.

The esophageal acid perfusion test was carried out in 198 patients, 13 of whom had no symptoms and 185 had specific thoracic or abdominal complaints. The data presented demonstrate in a large number of patients the ability of the acid perfusion of the esophagus to repetitively elicit symptoms which subside when the acid perfusion is stopped and that the symptoms are not anginal as produced by the acid perfusion test indicated by (a) the direct time and relationship, (b) the failure of the perfusion test elicited symptoms to be accompanied by electrocardiographic change or abnormality, and (c) a failure of the test induced pain to be relieved by nitroglycerin. This study supports the concept that clinical esophageal pain results from an underlying organic esophageal disease which usually is (but often not) objectively demonstrable as the endoscopic inflammatory changes of esophagitis. The stress of the esophageal acid perfusion test serves as an objective means of eliciting those clinical esophageal symptoms. The test to elicit esophageal pain is considered by the authors as objective and reliable as the repetitive application of exertional stress to elicit anginal pain. The two types of disease may be separated in this manner whether or not there is objective evidence of underlying esophageal or cardiac disease, respectively. A positive test may produce symptoms unrelated to any that the patient has experienced before. In such a situation the test is valuable as indicating that the symptoms do not have an esophageal origin. They may,

however, be genuine false-negative tests with esophageal disease and also false-negatives due to prior antacid therapy.

The test is important in patients with asymptomatic organic heart disease in order that esophageal pain may be recognized as esophageal in origin and not attributed to the heart disease. In a few patients a situation was found in which there were symptoms with characteristics both of angina and of esophageal symptom complex. These symptoms were reproduced by the acid perfusion test. The explanation offered was that these few patients had both angina pectoris due to heart disease and esophageal pain due to esophageal disease which was symptomatically identical.

A report of this investigation presents a well documented, closely reasoned and informative discussion of the results of the acid perfusion test. The indication is that it will provide an objective method of evaluating esophageal symptoms. It should become a valuable addition to the diagnostic facilities of the physician. Although the authors have been quoted freely a close study of the original paper will be rewarding.

[1] Bernstein, L. M., Fruin, R. C., and Pacini, R.: Differentiation of Esophageal Pain from Angina Pectoris: Role of the Esophageal Acid Perfusion Test. Medicine, 41:143 (May) 1962.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

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LEGISLATIVE ROUNDUP

Surprise Move . . . The House Ways and Means Committee passed by unanimous vote on August 14 a bill (H.R. 10117) which would provide a tax incentive for employers to provide health care in employee retirement programs . . . The bill had been introduced on February 7 by Rep. Thomas B. Curtis (R., Mo.) as an alternative to H.R. 4222 . . . Action by the House Committee on the Curtis bill at this time came as a surprise . . . The bill has a chance for enactment, even though it is late in the session . . . The unanimous vote in the Ways and Means Committee indicates there is general support for the measure . . . The AMA Board of Trustees, following a recommendation of the Council on Legislative Activities, gave approval to the bill at its April meeting.

Curtis Comments . . . Rep. Curtis said passage of his bill "would provide another meaningful step in finding effective ways to provide for the health needs of Americans." . . . He added: "It involves some of the most advanced techniques of health insurance including that of prepayment." . . . Curtis explained that the individual would be able to provide for financing his future health needs by payment, through fringe benefits, on health insurance during his working years . . . The Missouri Congressman declared that passage of his bill would take much of the steam out of the Administration's drive for health care financed under the Social Security mechanism.

How It Would Work . . . The Curtis bill would —for the first time—allow a tax deduction on company payments to medical funds to cover the health expense of retired employees . . . Companies may now claim a tax deduction on pension fund contributions, but current law provides that if medical expenses are included, the entire deduction is lost . . . Curtis explained that because of the severe tax penalty involved, industry has consciously avoided adding medical expenses to retirement programs. He said 15 million workers are now covered by pension funds containing about $50 billion . . . If medical aid could be provided to these workers and their wives upon retirement, he continued, it would go a long way toward meeting the aged health care needs . . . As passed by the Committee, the bill would permit medical benefits for the retiree, plus his spouse and dependents . . . Also, separate funds would have to be set up for medical benefits and for retirement income in order for employer contributions to be tax deductible.

Drug Bills . . . During the week of August 20-24, the Senate was expected to take up the Kefauver drug control bill, S. 1552 . . . The Senate Judiciary Committee had altered the original bill considerably . . . However, following the thalidomide episode, the Committee accepted additional amendments which strengthened the Federal Government's role . . . Hearings on the Administration drug bill (H.R. 11581) were scheduled by the House Interstate Committee on August 20-24 . . . According to present information, the House recess is not expected to affect the hearings.

Miscellany . . . Seward Miller, M.D., chairman of AMA's Committee on Medical Aspects of Automotive Safety, testified before the Health and Safety subcommittee of the House Interstate Committee in favor of H.R. 13400. The bill would authorize the Secretary of Commerce to establish standards for automobile seat belts. Dr. Miller, appearing for the Association, said federal standards were necessary because the average driver has neither the knowledge nor the facilities to assure himself of seat belts which would provide effective protection . . . On August 13, by a voice vote, the House passed H.R. 1341, which would require passenger-carrying motor vehicles purchased for use by the Federal Government to meet certain safety standards . . . On August 14, the President signed S. 3109 which authorizes hospital and medical care for peacetime veterans suffering from noncompensable service-connected disabilities . . . It is now known as Public Law 87-582.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POSTGRADUATE COURSE IN OPHTHALMOLOGY

The Fourth Annual Postgraduate Course in Ophthalmology of the Emory University School of Medicine will be presented on Thursday, November 29 and Friday, November 30, 1962, at the Grady Memorial Hospital, Atlanta, Georgia, under the sponsorship of the Department of Ophthalmology, Emory University School of Medicine.

Ocular therapy is to be featured. The course is designed for the practicing clinical ophthalmologist and will consist of lectures and panel discussions by outstanding national authorities on the medical therapy of many of the ocular conditions commonly encountered in everyday practice. Certain minor surgical procedures are to be included.

Guest lectures for the 1962 course will be Dr. James H. Allen, Chairman of the Department of Ophthalmology, Tulane University School of Medicine, New Orleans, La.; Dr. Gordon Bruce, Professor of Clinical Ophthalmology, College of Physicians and Surgeons, Columbia University, New York, N. Y.; and Dr. John McGavic, Professor of Ophthalmology, Temple University School of Medicine, Philadelphia, Pa.

A detailed program for the meeting will be mailed at a later date. Plan now to attend.

THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS DISTRICT VII

District VII of The American College of Obstetricians and Gynecologists will hold its tenth annual meeting September 20-22, 1962 at the Hotel Marion in Little Rock, Arkansas. A preliminary program is being presented by The Arkansas Obstetrical and Gynecological Society and the Department of Obstetrics and Gynecology, University of Arkansas Medical Center, on Thursday, September 20.

Featured speakers for this meeting will be the Honorable Wilbur Mills at the banquet on Friday evening, September 21, and Dr. William F. Mengert of Chicago at the luncheon on Saturday, September 22.

District VII will also sponsor its third annual conference on Obstetrical, Gynecological and Neonatal Nursing at the Lafayette Hotel, Little Rock, September 19, 20 and 21. Panel discussions and conferences in small groups will be led by obstetricians and gynecologists, and nurses experienced in obstetric, gynecologic and neonatal care. Chairman of the conference is Dr. Michael Newton of the Department of Obstetrics and Gynecology at the University of Mississippi Medical School.

CLINICAL SYMPOSIUM CHRONIC PULMONARY DISEASES

The University of Texas Postgraduate School of Medicine and The National Cystic Fibrosis Research Foundation will co-sponsor a clinical symposium on "Chronic Pulmonary Diseases with Special Emphasis on Cystic Fibrosis," on October 12 and 13, 1962. The program will be held in the Auditorium of the Texas Children's Hospital in the Texas Medical Center, Houston, Texas.

The program has been designed to be of interest and help to all physicians treating chronic pulmonary diseases. As a part of the program, a panel discussion with presentation of cases that illustrate specific clinical problems is scheduled. Dr. Gunyon M. Harrison, Director, Cystic Fibrosis Clinic, Texas Children's Hospital, will present the clinical cases.

MEETING NOTICE EIGHTH HAHNEMANN SYMPOSIUM

Title: Medical Considerations in the Surgical Patient.

Sponsored by: Hahnemann Medical College and Hospital, 230 North Broad Street, Philadelphia 2, Pa.

Date of Meeting: December 12 to 14, 1962.

Location of Meeting: Sheraton Hotel, 1725

Pennsylvania Blvd., Philadelphia 3, Pa.

Purpose: To consider the major medical problems which the physician encounters in the surgical patient. The program is divided into the following subsections:

1. Evaluation and preparation of patients with difficult cardiovascular problems requiring surgery.

2. Therapy of cardiovascular-pulmonary problems in the postoperative period. Special emphasis on fluid and electrolyte problems, cardiac surgery problems and the diagnosis and management of shock.

3. The evaluation of endocrine problems in the pre- and postoperative period.

4. Evaluation and management of gastrointestinal disorders in the pre- and postoperative period.

For further information contact: Wilbur W. Oaks, M. D., Director, Hahnemann Medical College and Hospital, 230 North Broad Street, Philadelphia 2, Pennsylvania.

BOOK REVIEWS

Toward the Diagnosis of Congenital Heart Disease; by W. Carleton Whiteside, M. D., Charles C Thomas, Publisher, 1960, 86 p. $4.50.

Dr. Whiteside, a cardiovascular surgeon, has approached the diagnostic aspect of congenital heart disease in a dogmatic manner. The first chapter consists of 136 aphorisms, listed without apparent order or relation. The first aphorism "Know the embryology, anatomy, biochemistry and the physiopathology of heart disease" would alone suffice for all cardiac diagnoses. Some remarks are inane, for example, "Use good clinical judgment in all aspects of differential diagnosis". Other remarks are in error, as, "Congestive heart failure rarely occurs in childhood in the natural course", and "A small heart is a normal heart (unless compressed)."

The book has been written in an abbreviated and concise manner and may possibly serve to stimulate interest in the diagnostic aspects of cardiology. It cannot likely be of value to one hoping to understand physiopathology of the heart.

MARION K. LEDBETTER, M. D.

Relief of Symptoms; by Walter Modell, 2nd Edition, The C. V. Mosby Co., St. Louis, 1961, 374 p. $11.50.

Providing the patient with relief from distressing symptoms is an aspect of medical care which is at best taken for granted, if it is considered at all, in our time's emphasis on specific treatment and cure of disease. It is therefore refreshing to have available a book devoted in its entirety to this subject.

As the author indicates, his unique book is offered as a practical guide, intended for use in medical teaching as well as in medical practice, and it succeeds very well in its purpose. It is divided into chapters, each discussing a commonly presented symptom. The presentation of each problem and of measures suggested for its relief is handled in straightforward and eminently practical fashion, and in a manner which leaves little room for doubt of the author's experience and wisdom.

This volume is accordingly highly recommended, and should prove rewarding to anyone who consults it.

THEODORE F. TREUTING, M. D.

Appraisal of Current Concepts in Anesthesiology; by John Adriani, Editor, Mosby, 1961, 279 pp. $7.75.

This pocket-sized volume is of specific interest for practicing clinicians in anesthesiology and should be an aid to trainees. It is compiled and edited from a series of reviews of timely topics. Each includes a relatively short summary of past and current concepts of the individual subject.

The material is presented in such a manner as to be of greater current value than a standard textbook would allow. Such a format should be perpetuated. It provides valuable, interesting, and easy reading for the clinical anesthesiologist.

S. R. MINTZ, M. D.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Consumers Union of U. S., Inc., Mount Vernon, N. Y.: The Consumers Union Report on Family Planning, by Alan F. Guttmacher, M. D., and the Editors of Consumer Reports.

The C. V. Mosby Co., St. Louis: Strabismus, Symposium of the New Orleans Academy of Ophthalmology, edited by George M. Haik, M. D.

W. B. Saunders Co., Phila.: Clinical Biochemistry, by Abraham Cantarow, M. D. and Max Trumper, Ph.D. (6th edit.); Gynecology, by Langdon Parsons, M. D. and Sheldon C. Sommers, M. D.; Gynecology and Obstetrics, by John William Huffman, M. D.

The Williams & Wilkins Co., Balt.: Child Health in the Tropics, edited by D. B. Jelliffe, M. D.





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1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

For prescribing information, please see *PDR* or available literature.

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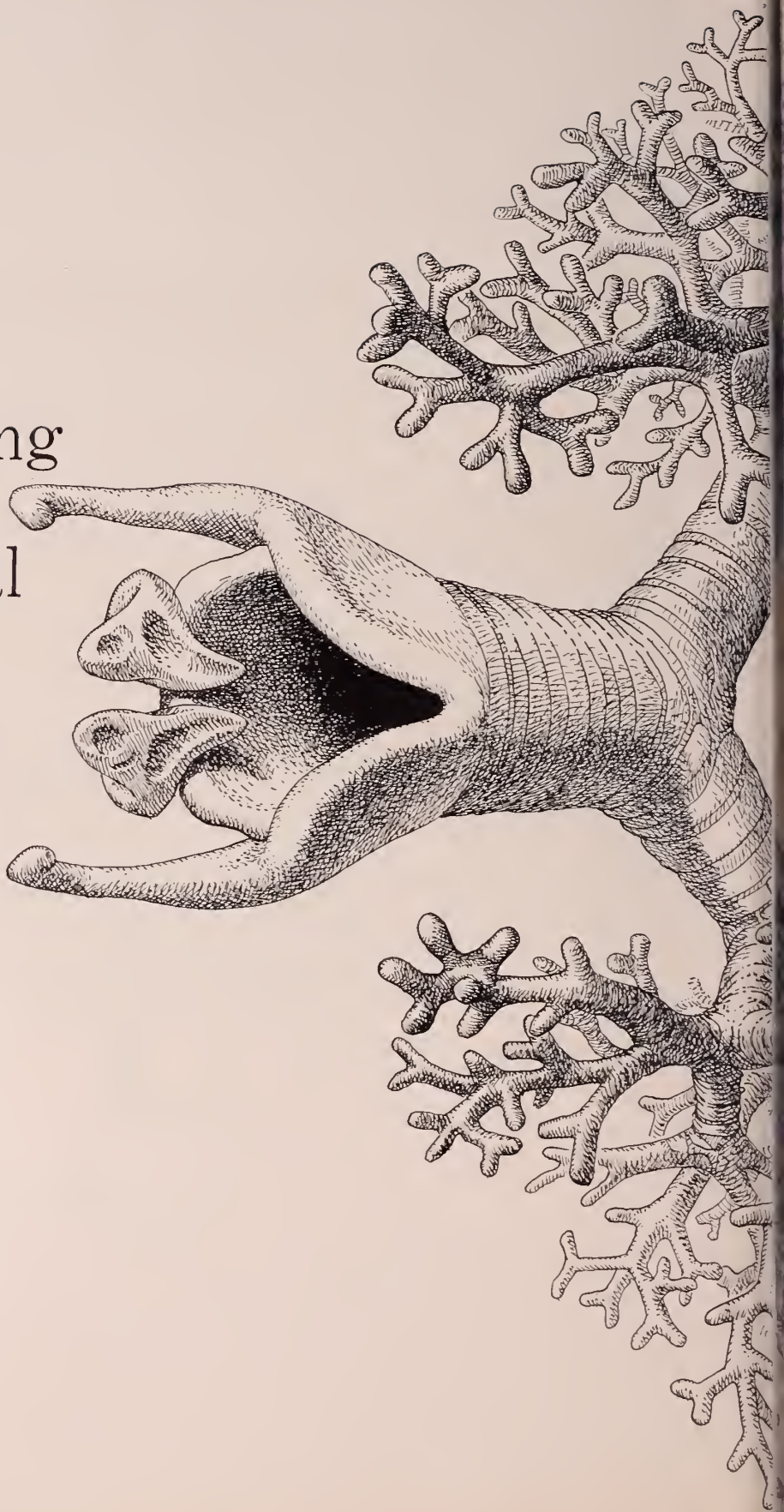
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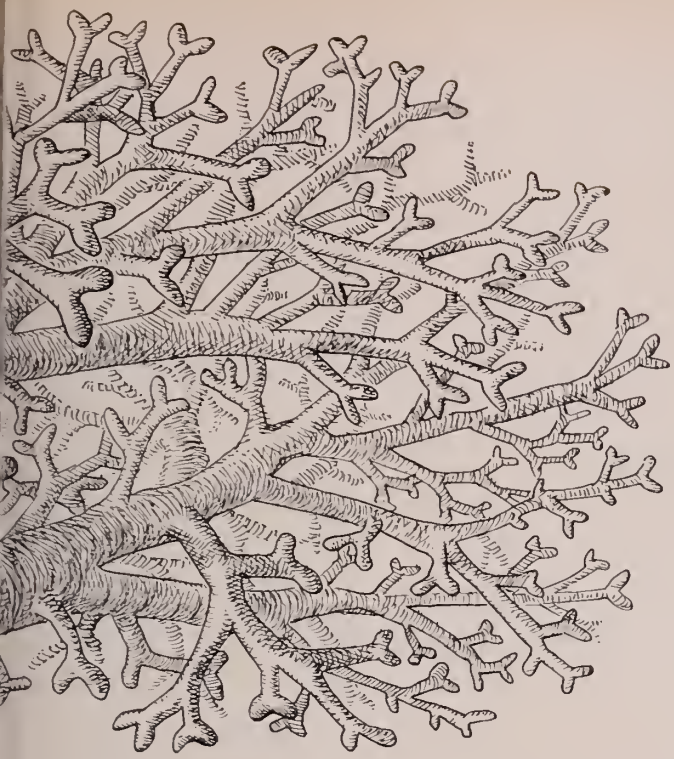
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1 Ford R A and Blanchard K Journal Lancet 78 185 1958

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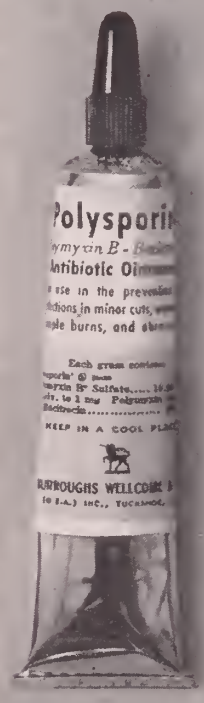
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1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism. August 1959.*

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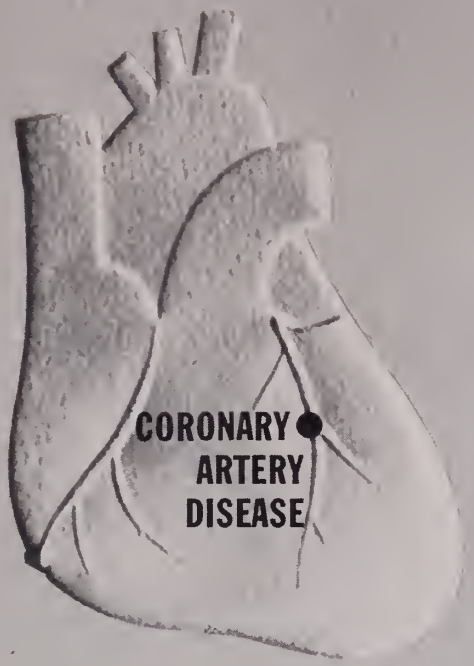
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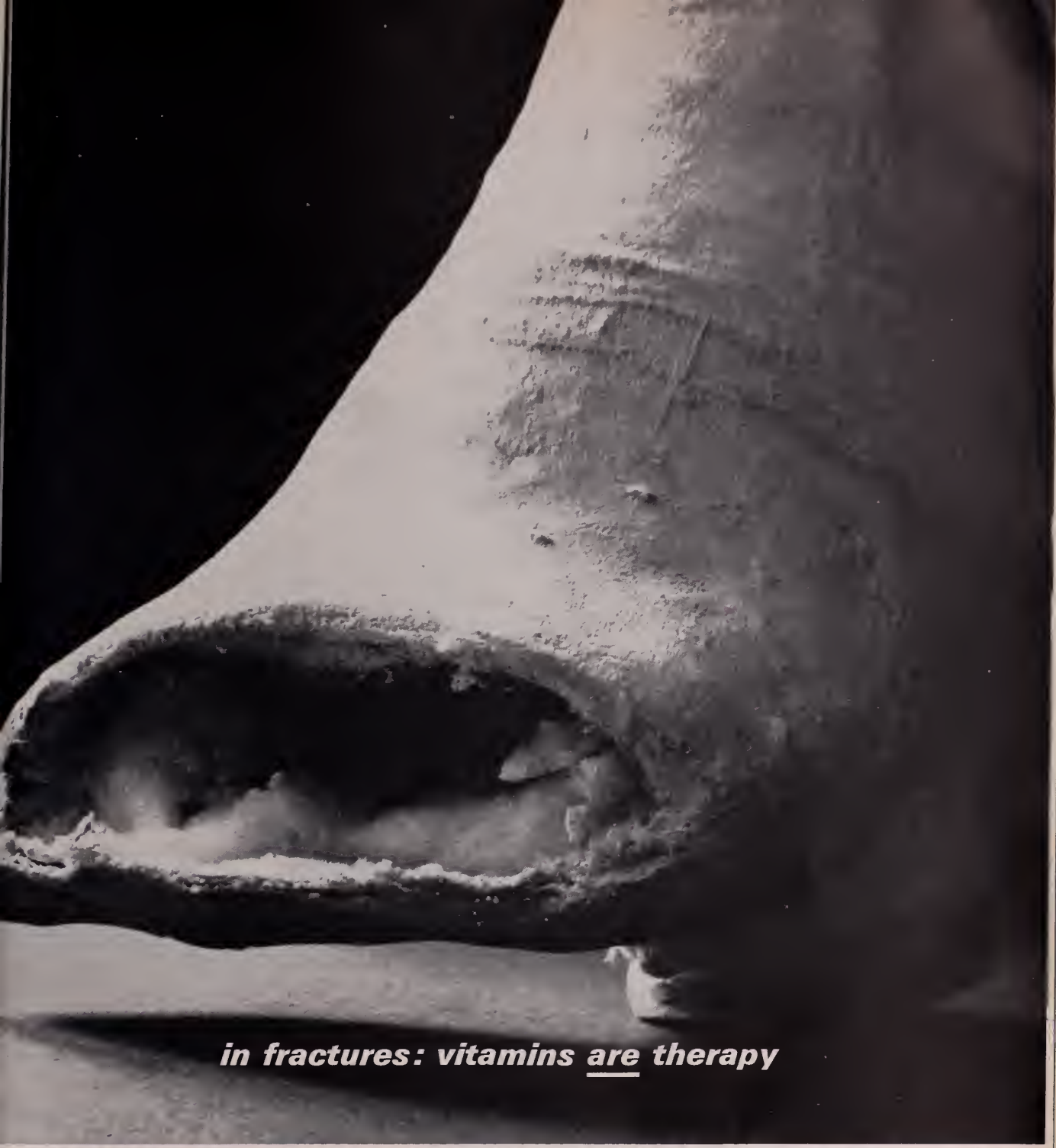
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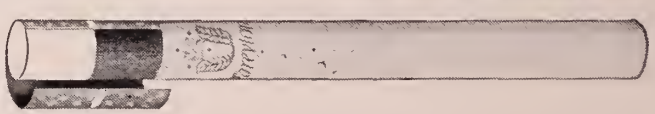
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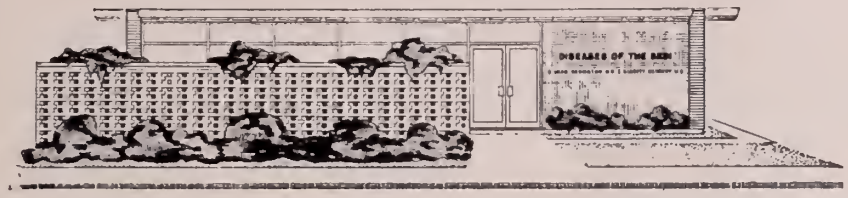
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ENCEPHALITIS OUTBREAK IN FLORIDA

The lay press has carried various reports on an outbreak of arthropod-borne encephalitis which has recently occurred in Florida. Because of numerous inquiries to the State Board of Health by physicians, it is felt that a resume of the official report published by the Communicable Disease Center of the U. S. Public Health Service would be in order. The majority of the cases have been clustered in and around Pinellas County (Tampa-St. Petersburg) Florida. Onset of the first case occurred July 24, 1962. Since then, and up to the present writing, 223 cases of presumptive arthropod-borne encephalitis have been reported and are being investigated. One hundred and eighty-one of these cases occurred in Pinellas County. Fourteen of the remaining 42 cases from other counties gave a history of being in Pinellas County prior to becoming ill. Other counties reporting cases are Sarasota, Manatee, Orange, Nassau, Sumter, Hillsborough, Palm Beach, Escambia, Dade, Broward, Citrus, Alachua, and Columbia Counties. Pinellas County accounted for 13 of the 18 reported deaths from this disease. Autopsy findings in seven cases were consistent with viral encephalitis. Serological studies on a high percentage of the total cases have been consistent with the findings of viral encephalitis.

The last known cases of arthropod-borne encephalitis to have occurred in Louisiana were reported in 1958, when two cases were reported, both fatal.

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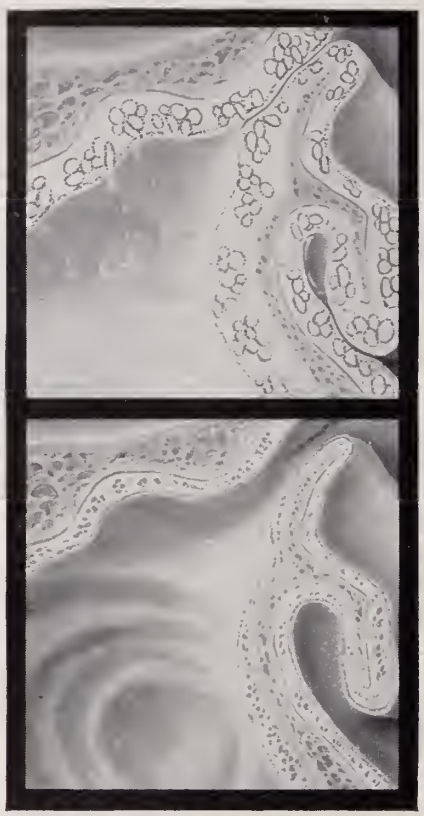
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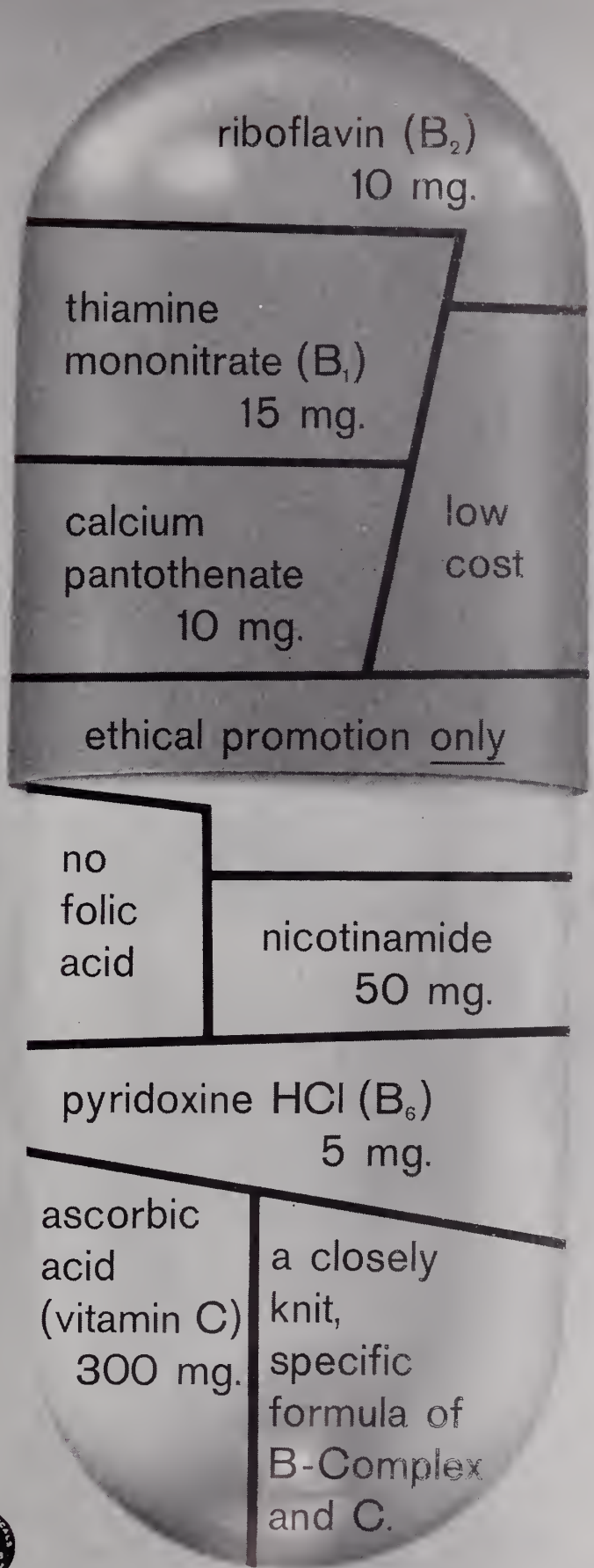
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1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

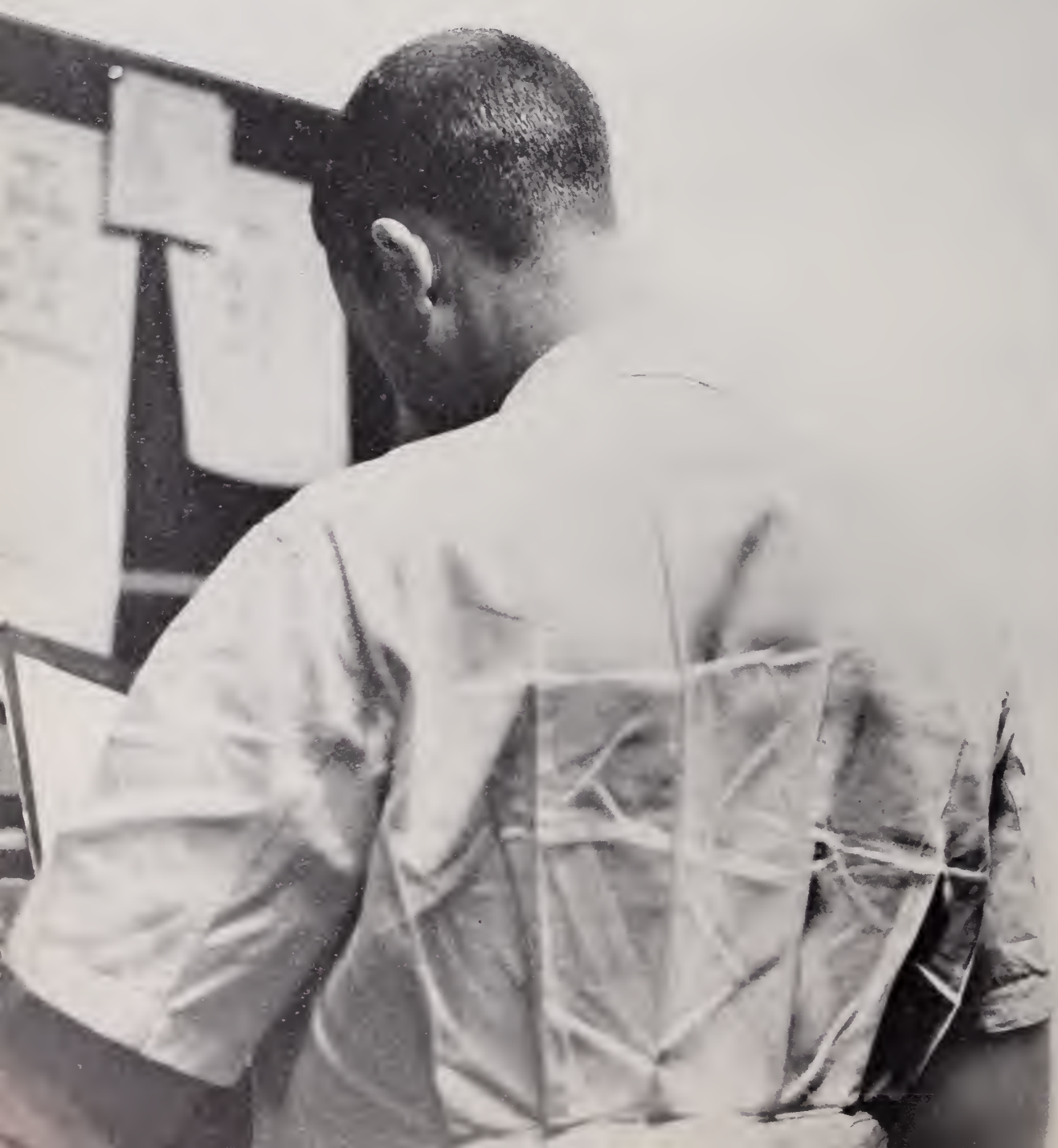
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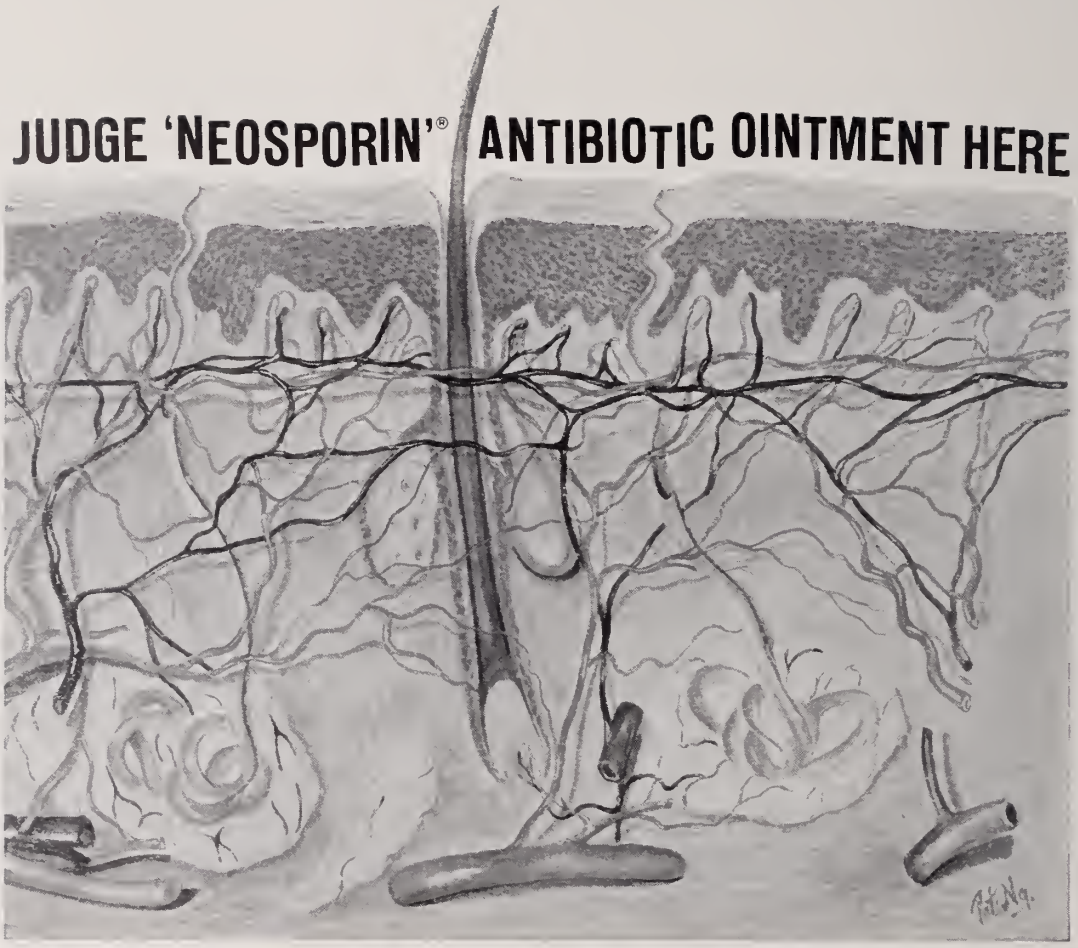
References: (1) Katz, Y. J., & Bourdo, S. R.: *Pediat. Clin. North America* **8**:1259, 1961. (2) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Whitaker, L.: *Canad. M. A. J.* **84**:1022, 1961. (6) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959.

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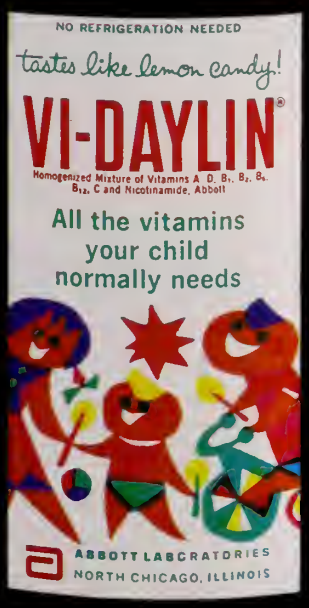
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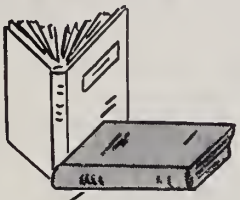
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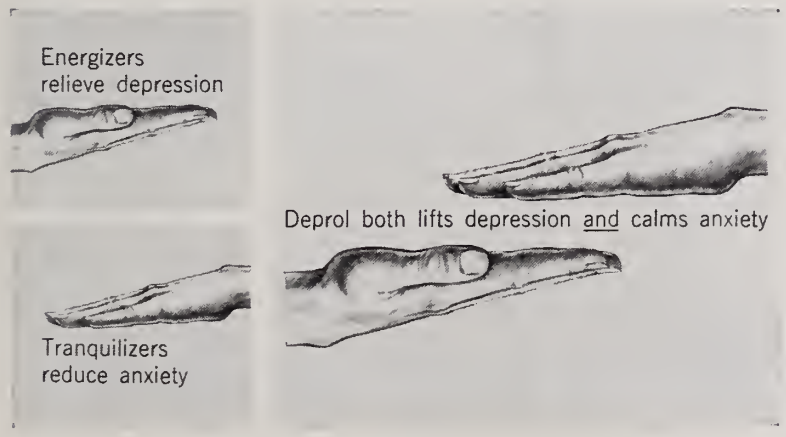
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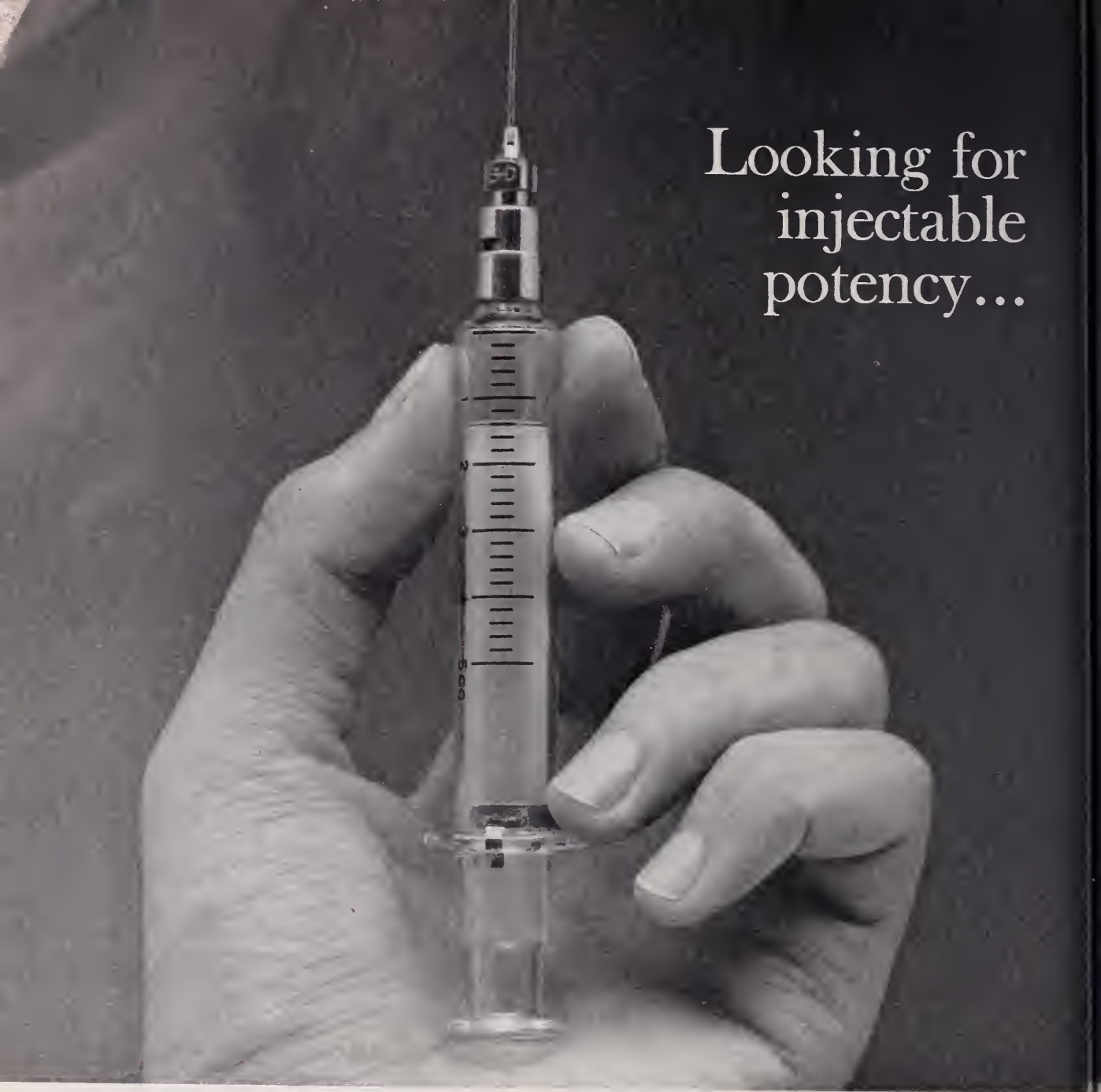
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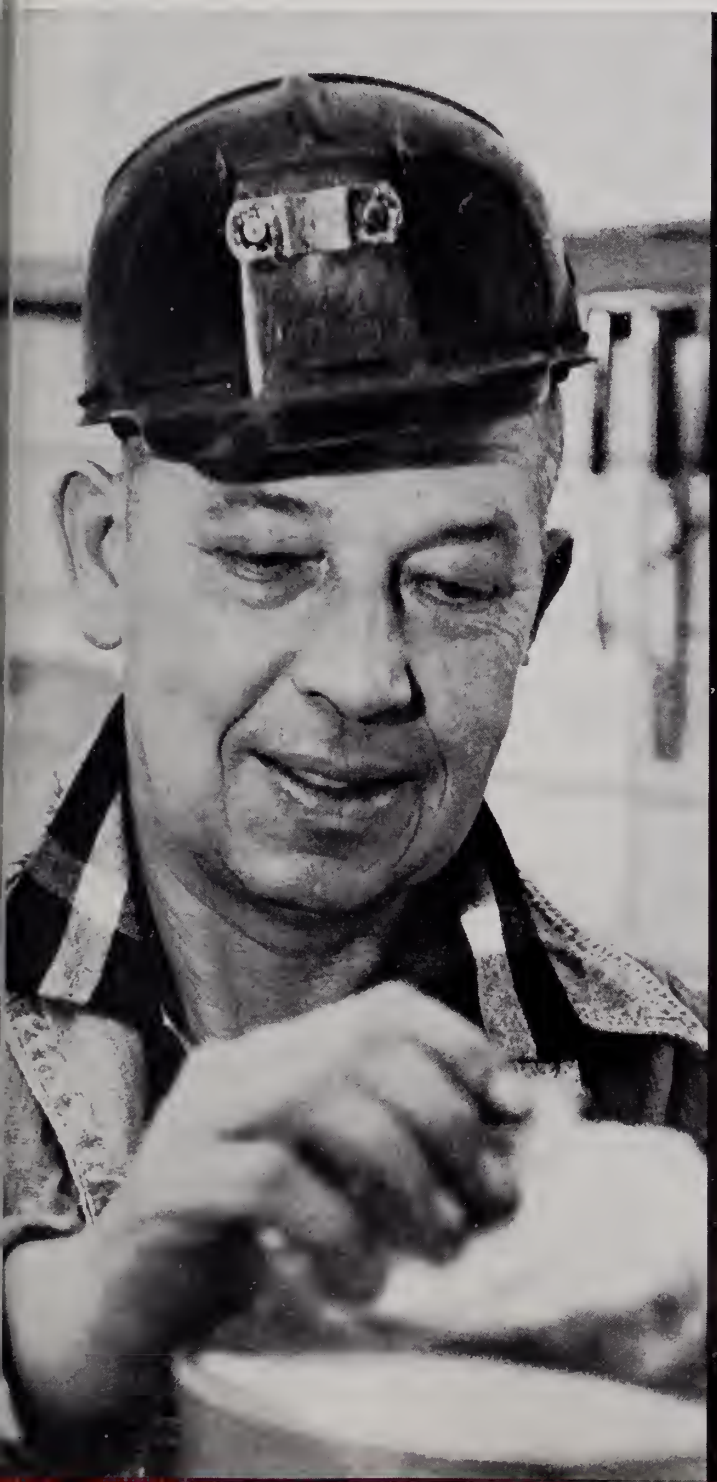
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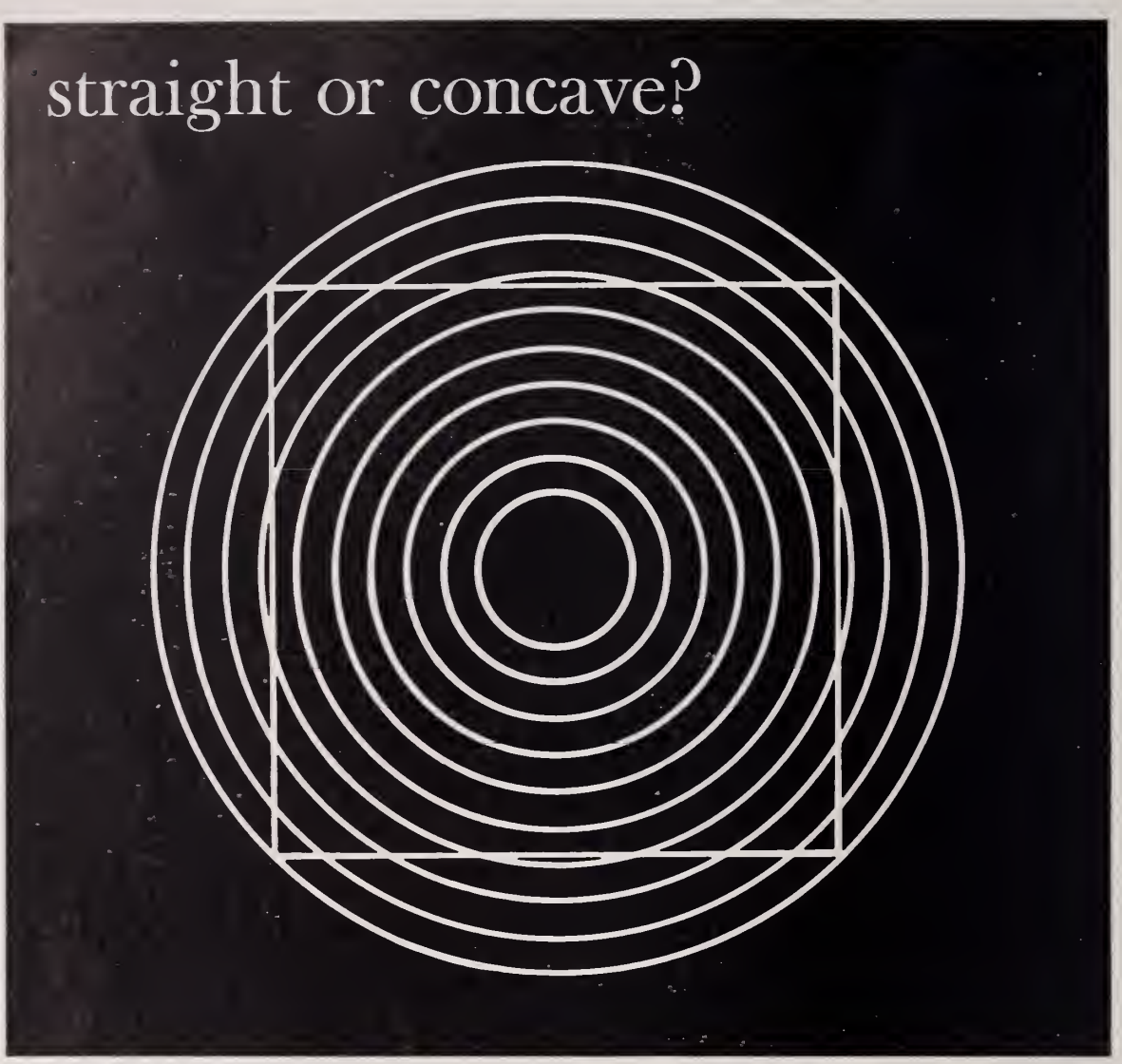
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1. Griffith, R. S.: Antibiotic Med. & Clin. Therapy, 7:129, 1960.

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The Journal

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Vol. 114, No. 10

OCTOBER, 1962

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

Improving Mortality in Obstructions of the Colon*

• Recognition and prompt treatment of obstruction of the colon are the most potent means of reducing the high mortality from this cause.

LAWRENCE H. LINDER, M. D.†
MARSHALL L. MICHEL, M. D.‡
New Orleans
WHITE E. GIBSON, M. D.§
Fort Stewart, Georgia

THE high mortality of acute obstruction of the colon continues to be a challenge to the surgeon. The purposes of this paper will be to attempt to show the reasons for the continuing high mortality, point out some of the areas of improvement, and to demonstrate how the trends in hospitalization effect this mortality. These aims will be aided by the presentation of a series of 246 cases of colon obstruction which will be compared with an earlier reported series of 200 cases.[1]

Material

The present series was collected from the records of the 2911 public bed Charity Hospital of Louisiana at New Orleans and from the 456 private and public bed hospital, Touro Infirmary, also in New Orleans. The 246 cases occurred over the nine year period, 1953-1961 during which time there were 823,969 admissions to these two institutions. The previous series of 200 cases is from the same hospitals and occurred during the eleven year period, 1942-1952. The regional distribution of the 246 cases in the present series is depicted in Figure 1.

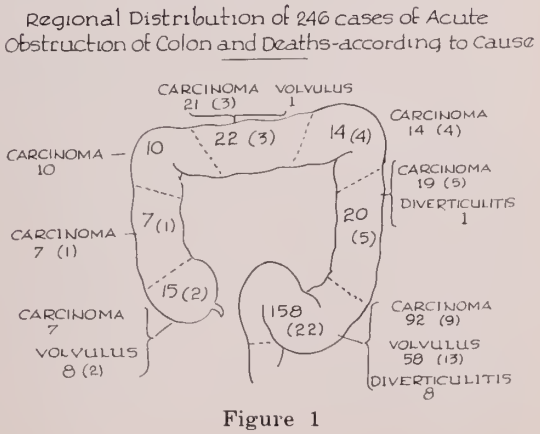


Figure 1

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 8, 1962.

From Tulane University School of Medicine, Department of Surgery and Touro Infirmary, New Orleans.

† Instructor in Surgery, Tulane University School of Medicine.

‡ Associate Professor of Surgery, Tulane University School of Medicine, New Orleans.

§ Assistant Chief of Surgery, Fort Stewart, Georgia.

Mortality

During the period of the present series, there were 21 other cases of obstruction of the colon with two fatalities (Table 1). Primary neoplasm, volvulus, recurrent neoplasm and diverticulitis make up the bulk of the cases. Primary neoplasm is used in this discussion rather than carcinoma, because, of the 170 cases there were 168 carcinomas, 1 reticulum cell sarcoma and 1 carcinoid tumor. Discussion here will be limited to primary neoplasm, volvulus and diverticulitis, since the remaining causes, other than recurrent neoplasm, are relatively infrequent. Recurrent neoplasms, which were excluded from the previous series, are not included in the present series for purposes of comparison.

In the earlier series there were 46 fatalities in 200 cases, or 23 per cent. A further breakdown of this series showed 30 deaths in the first 103 cases, or 29 per cent, in the period, 1942-1948. In the second portion of that series, there were 16 deaths in 97 cases, or 16.5 per cent. This improvement did not continue at the same rate in the present series in which there were 37 fatalities in 246 cases, or 15 per cent. A breakdown of the mortality at the two hospitals individually shows the mortality for the period, 1942-1948 at Charity Hospital and Touro Infirmary were about the same, 30 per cent and 27 per cent, respectively. In the following two series, 1949-1952 and 1953-1961, the figures separated markedly. Touro Infirmary's mortality fell to 9.6 per cent and then to 3.1 per cent, while at Charity Hospital it fell to only 20 per cent and then remained at 19.4 per cent (Figure 2). Part of the difference may be found in the fact that Touro Infirmary is in the main a private hospital and therefore infrequently receives the poor risk patient who makes up a fair proportion of the Charity Hospital emergency cases.

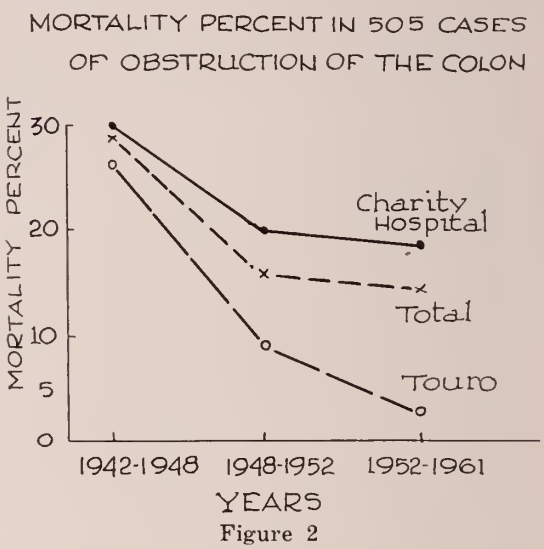


Figure 2

It will be seen as the discussion of these series progresses that there are four basic reasons for the continuing high mortality. These may be stated as: (1) Advanced age of the patient; (2) The serious nature of the primary causes; (3) The delays to treatment and, (4) The lack of wide experience by the individual surgeon. Fortunately, some of the reasons stated in the earlier series such as: errors in diagnosis and therapy which arose from a mistaken concept of large bowel obstruction were not apparent in the present series.

TABLE 1
DISTRIBUTION AND MORTALITY ACCORDING TO CAUSE IN 505 CASES OF OBSTRUCTIONS OF THE COLON

Causes	Cases		Deaths	
	1942-1953	1953-1961	1942-1952	1953-1961
Primary Neoplasm	153	170	37	22
Primary Volvulus	38	67	8	15
Recurrent Neoplasm	14	12	7	2
Diverticulitis	9	9	1	
Postoperative Adhesions	6	3	1	
Hernia of the Foramen of Bochdalek		2		
Colocolic Intussusception	6	1	1	
Incarcerated Inguinal Hernia	3		1	
Gynecologic Disease	3			
Miscellaneous	5	4	1	

The three diseases under discussion and their common complication of acute colon obstruction are predominantly found in the older age groups (Figure 3). This fact

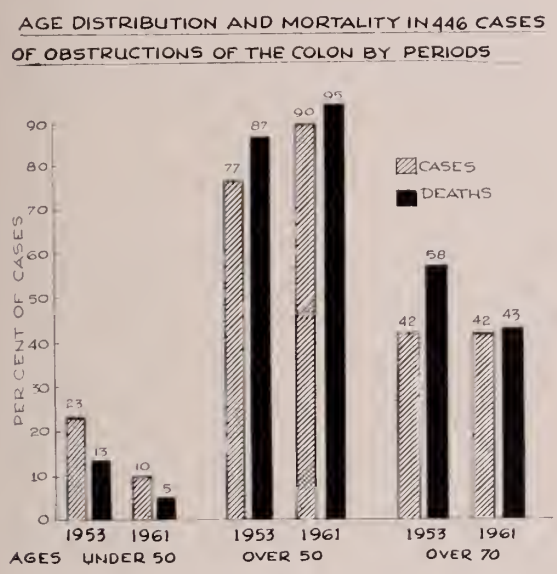


Figure 3

unquestionably affects the mortality, as is adequately shown in both the first and second series where the patients over 50 years of age provided 77 per cent and 90 per cent of the total cases. These patients also provided 87 per cent and 95 per cent of the total deaths. In the group over 70, who provided 42 per cent of the cases in both series, provided 58 and 43 per cent of the deaths. This difference in the percentage of cases and percentage of deaths in both age groups is too large to ignore. However, the reduction of this difference in the present series does demonstrate some gratifying improvement. It is also interesting to note that the percentage of patients over 50 years increased in the second series while the percentage over 70 remained the same. These figures were essentially the same for both hospitals.

The second reason for poor risk and resultant high mortality has to do with the nature of the obstructing disease. The patient with obstructing neoplasm of the colon faces a double peril: First, from a potentially lethal complication, and second, from the potentially lethal primary disease. Further, the patient with malignant obstruction has been ill for a long period of time, whether he knows it or not. These patients often have serious secondary anemia, protein deficits and many had metastatic disease. It was found in a previous study that 26 per cent of the patients treated at Charity Hospital with a diagnosis of carcinoma of the colon were obstructed, and at Touro Infirmary 29 per cent.[3] During the period of the present study, 575 patients with the diagnosis of carcinoma of the large bowel were treated at Charity Hospital, 115 of whom (20 per cent) were obstructed. Six hundred patients with carcinoma of the large bowel were treated at Touro Infirmary in this same period, 53 of whom (9 per cent) were obstructed. There were no deaths at Touro Infirmary and 22 deaths in the 117 malignant obstructions at Charity Hospital, or 18.8 per cent. This great reduction at Touro Infirmary is credited to earlier diagnosis and treatment of predominantly private patients and again points to the later stages of the disease seen and poorer risk patients treated at Charity Hospital. One extreme example is a case of an elderly white female who was admitted to Charity Hospital in critical condition four days after the onset of symptoms. This patient died three hours after admission while being evaluated for operation. Autopsy showed an obstructing carcinoma of the ascending colon with perforation of the cecum and gross fecal peritonitis.

The elderly patient with obstructing diverticulitis presents an increased risk due to the lowered resistance of chronic infection, although these patients are usually in a better general condition. That these patients are a more favorable risk for major surgery is shown in a total of 18 cases in both series where there was only 1 death (5.5 per cent). In the present series, there were no deaths in 9 cases. This extremely low mortality points to the fact that although diverticulitis is being diagnosed more frequently, it is being treated earlier and with less secondary complications.

The patient with volvulus has a more acute course and does not show the progressive deterioration typical of carci-

noma and diverticulitis. However, these patients are in even greater immediate danger because of the rapidity with which circulation of the involved bowel may be compromised. Eight of the 15 patients who succumbed to this disease had gangrenous bowel at the time of surgery. The time from onset of symptoms to operation in all 8 of these deaths was less than that of the series in general. The mortality of volvulus was 21 and 22 per cent in the first and second series respectively. The incidence of volvulus during these periods decreased at Touro Infirmary while it nearly doubled at Charity Hospital. Perhaps one of the most significant reasons for this discrepancy is the better attention to bowel function in the private patient.

As stated in the first series, delay from the onset of symptoms to treatment is another important reason for the continued high mortality. In the present series, approximately two-thirds of the patients where this delay was stated, had their onset seventy-two hours or more prior to their admission to the hospital. The patients themselves are not always at fault in this regard. There were 27 patients who had their onset while hospitalized for one reason or another. In 6 of these cases there was a delay from twenty-four to one hundred and forty-four hours from onset to treatment. Seven of 27 obstructions occurring during hospitalization ended fatally. As in the case cited above of the elderly lady with carcinoma of the ascending colon, it would seem that this factor of delay is one where improvement could certainly have been made.

Diagnosis

The last of the four reasons, lack of wide experience by the individual surgeon, is amply shown in the present series. The 218 cases where the attending surgeon was known, were treated by 125 surgeons, 23 Staff members and 102 residents (Figure 4). One Staff member handled 9 cases and 2 residents handled 5 each, but 77 surgeons handled only 1 case. The latter number is greater than the total number of surgeons in the first series, which was 72. Sixty-four of the 102 residents, or about two-thirds, treated only 1 case each.

Although the incidence of acute obstruction of the colon is low and the number of cases handled by any one surgeon is few, it is gratifying to note that there were less

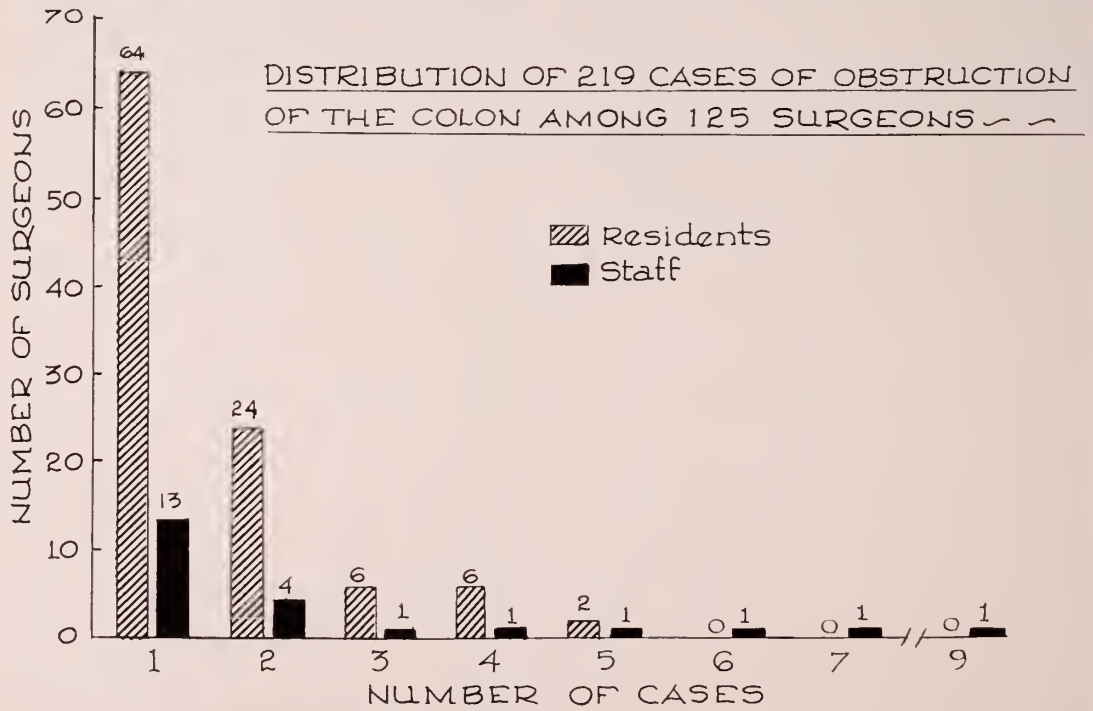


Figure 4

errors in diagnosis and treatment in the present series as compared to the previous one. The admission and/or preoperative diagnosis in practically all of the cases in the present series were stated as large bowel obstruction, some of these even suggesting the region of the colon which was obstructed. It should also be noted that small bowel intubation was used as therapy preoperatively in only 2 cases, and both of these had their onset during hospitalization. It appears, therefore, that one of the rather frequent errors in the earlier series of not distinguishing between large and small bowel obstruction has been overcome. The liberal use of admission proctoscopic and barium enema examinations was another factor in arriving at an early correct diagnosis, so that proper treatment could be instituted. These examinations were performed in the greater majority of the patients and most of them were done as emergency procedures.

Therapy

The distribution of the modes of therapy, according to the three primary causes and the resultant mortalities, can be seen in Table 2. It will be readily noted that cecostomy for both carcinoma and volvulus carried a high mortality and further investigation revealed that this was usually a desperate attempt to decompress a very poor risk patient and generally local anesthesia was used. In many of these patients perforation of the cecum had already occurred which added to the surgical risk and greatly increased the mortality. Another area that warrants discussion is the patients treated by proctoscopic intubation whose obstruction was caused by volvulus. Although this is recognized as an excellent form of therapy in sigmoid volvulus, there were 4 deaths in 22 cases thus treated. Two of these patients, both over 70 years of age, were completely decompressed at the time of their death some two weeks following admission. One died of a cerebral vascular accident, the other of bilateral pneumonia. A third patient who was admitted in a moribund condition, after one week delay, was reduced on admission by proctoscopic intubation. When the patient's condition did not improve a futile heroic abdominal exploration was undertaken. Previous detorsion was confirmed at operation. The patient died five hours postoperatively in irreversible shock. The last of these four deaths was a patient who had chronic pyelonephritis and died of a gram negative septicemia secondary to her renal disease two weeks after satisfactory treatment of her sigmoid volvulus.

One other mode of therapy that needs elucidation is primary resection. Both resection with primary anastomosis and exteriorization resection with formation of double barrel colostomy are grouped here. The overall mortality for this group was 23 per cent. However, further breakdown shows that in the primary anastomosis group there was a mortality of 14 per cent, while in the exteriorization group the mortality was 28 per cent. This exceedingly high mortality in the latter group can readily be explained by the fact that this procedure was undertaken in all but 3 cases for either gangrene or perforation of the resected segment. The other 3 cases

TABLE 2
THERAPY IN RELATION TO PRIMARY CAUSE IN 246 CASES OF OBSTRUCTIONS OF THE COLON

Causes	Neoplasm		Volvulus		Diverticulitis	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Colostomy	116	14	1	1	7	
Cecostomy	21	4	5	2	2	
Ileotransverse Colostomy	12					
Primary Resection	17	1	14	6		
Proctoscopic Intubation			22	4		
Detorsion			18	1		
Misc.			6	0		
None	4	3	1	1		

were for palliation of obstructing lesions of the transverse colon in elderly poor risk patients all of whom survived this procedure. In the primary anastomosis group, right hemi-colectomy was utilized in 9 cases with one fatality. This one death was due to postoperative thrombosis of the superior mesenteric vein which resulted in gangrene of almost the entire small bowel. The gangrenous bowel was found and resected at re-operation sixteen hours after the primary right colon resection. The patient died one week later.

In comparing the modes of therapy of the present series with the previous series (Figure 5) it will be seen that decom-

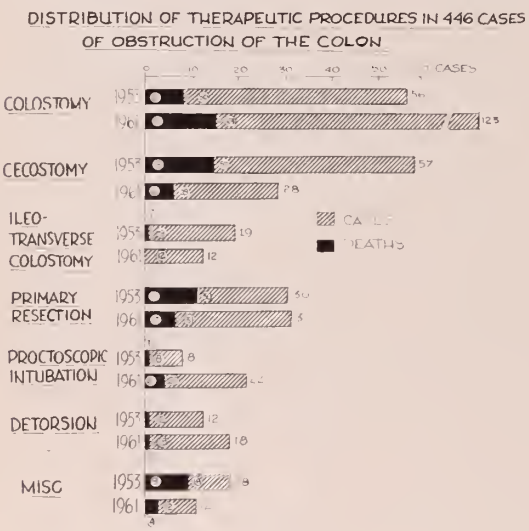


Figure 5

pression by means of colostomy increased markedly. In the first series, 28 per cent of the total number of patients were treated in this manner, whereas, in the present series 50 per cent were thus treated with equally low mortality, 14 per cent and 12 per cent respectively. In these comparative figures it is seen that the mortality was improved in all modes of therapy with the one exception of proctoscopic intubation. As has already been explained, the increased mortality in this category was due to 4 very poor risk patients. Thus it is seen that the primary objective in treatment of the acute obstruction of the colon should be directed at decompression. However, primary resection may be the treatment of choice in the occasional case. Certainly immediate exteriorization resection is indicated where there is gangrenous or perforated colon. Here the surgeon has no other choice. It is also apparent from the acceptable mortality figures in primary right colon resections, that this procedure is justified in the good risk patient of relatively short delay. Resections of the left colon, except under the most extenuating circumstances mentioned previously, are still best undertaken as a secondary procedure following adequate decompression.

Conclusion

In conclusion, it should be stated that the high mortality of acute obstruction of the colon is due primarily to the advanced age and poor risk patients seen with this condition. In order to reduce this mortality our main attack should be directed at improving the surgical risk of these patients, since we have no control over their advanced age. This aim can be accomplished by earlier diagnosis and treatment.

The already health conscious public should be made more aware of the seriousness of abdominal pain especially coupled with change in bowel habit. The physician population should insist on a more thorough diagnostic study of the patients presenting with these symptoms. Progress has been made in the field of malignant obstruction in that the incidence is decreasing through earlier diagnosis of these tumors, and the mortality has been lowered by more proper treatment of the patients presenting with this complication. The patients with diverticulitis apparently no longer present a problem as regards obstruction. Volvulus of the colon, on the other hand, still presents an exceedingly high mortality. Surely here improvement should be made. This can best be accomplished prophylactically by better attention to the bowel habits of the aging patient. By so doing, an attempt can be made to prevent the atonic redundant sigmoid colon in these patients. Earlier treatment of volvulus when it does occur, can only be had by prompt decompression pre-

ferably by proctoscopic intubation or if this is unsuccessful by operative detorsion. This will allow time to prepare the patient for elective resection of the redundant sigmoid. It is our belief that all patients with sigmoid volvulus should have a primary resection of this segment of the colon as soon as they can be prepared for this major surgery.

Summary

Two hundred forty-six cases of acute obstruction of the colon were compared to 200 cases previously recorded. Both of these series were collected from the records of the Charity Hospital of Louisiana at New Orleans and Touro Infirmary also in New Orleans. The major causes for this condition were again found to be primary neoplasms, volvulus and diverticulitis.

The continuing high mortality in acute obstructions of the colon was shown to be due to the following reasons: (1) Advanced age of the patient; (2) The serious nature of the primary cause; (3) The delay to treatment and, (4) The lack of wide experience by the individual surgeon. Improvement has been made in the areas of diagnosis and treatment.

Some suggestions for further improvement of the mortality figures, especially in volvulus, are directed at improvement of the surgical risk of the elderly patients seen with these maladies.

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2. Michel, M. L. and McCafferty, E. L.: Acute Obstructions of the Colon, with Special Reference to Factors of Mortality. Arch. Surg. 57:744, 1948.

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Poor Quality of Russian Drugs

Every year, there is an increase in the production of various drugs in our country. Many of them are sent for evaluational testing to the Central Pharmacological Research Institute. In the last year, for example, 112 various drugs were sent to us—ampules, tablets and others. And, it is deplorable that 75% of them did not meet the requirements of the official governmental pharmacopoeia and the technical standards. In the first three months of the current year, the Institute received some dozens more of pharmaceuticals and this time again, from the 74 tested, 58 did not meet the requirements.—**Meditsinskii Rabotnik** (Moscow), July 14, 1961.

Personal Injury Neurosis in Perspective*

• How the mental state of the patient who has been injured is affected by his situation in regard to his doctor, the insurance company, and the law.

GERALD N. WEISS, M. D.†
Lake Charles

ABOUT five centuries ago in Europe, a dread disease ran rampant through the adult population. Physicians, wise men, charlatans, politicians, and heads of state were unable to recognize and understand the cause of the malady. Because of the lack of knowledge of the cause of this disease, and with the little effective methods of treatment known at the time, it could not be struck down at its roots. A high morbidity and mortality occurred. Though the cause of the disease was not known, in view of its mutiple manifestations within the body, it had to be given a name. Since it occurred about the time of Columbus' discovery of America, Europeans though it was brought from America and might best be called the "New World Disease".

In 1494, many of Columbus' sailors joined Charles VIII of France in the invasion of Italy,[1] and it was thought that these men carried the disease to Italy where it reached epidemic proportions. The Italians, on the other hand, feeling the contact with the French had introduced the condition into their country, called it the "French Disease". The French, in turn, recognized it as the "Italian Disease", and when it became apparent that the disease was venereal in nature, the Germans and many other Europeans, preferred to call it the "French Disease". After four centuries of research and study, a special microscopic type of technique known as a "dark field examination" was developed and in 1905, the dread disease was recognized as being carried by a spirochetal agent. Since the turn of the century, remarkable advances have been made, and now, not only is syphilis recognized, but it is curable.

New Disease

Today, a dread, new disease is sweeping America. And though given various names, it is popularly recognized as Personal Injury Neurosis. Some describe this malady as a "suffering from causes for which there is no known disease". With such a great body of ignorance regarding this disorder, there has developed the problem of understanding, created by a new socio-economic environment. I have had passed among you a diagram, entitled "A Slowly Evolving Socio-Economic Problem" (See Figure 1). Whereas in the past a direct relationship existed between the doctor and the one who was ill and seeking help; there has come to be a series of parties involved in the care of the injured individual. As depicted in the diagram there now exists not only the physician and employee; but the employer; the insurance company; the attorney; and, in a sphere recognized as Workmen's Compensation, the law. In this new field of "working together", it is not uncommon to see the employer blame the insurance company; the attorney, blame the physician; the adjuster blame the attorney; and the injured blame everyone but himself. Today, this disease of the mind stands as a new frontier in much the same manner as did venereal disease when it appeared five

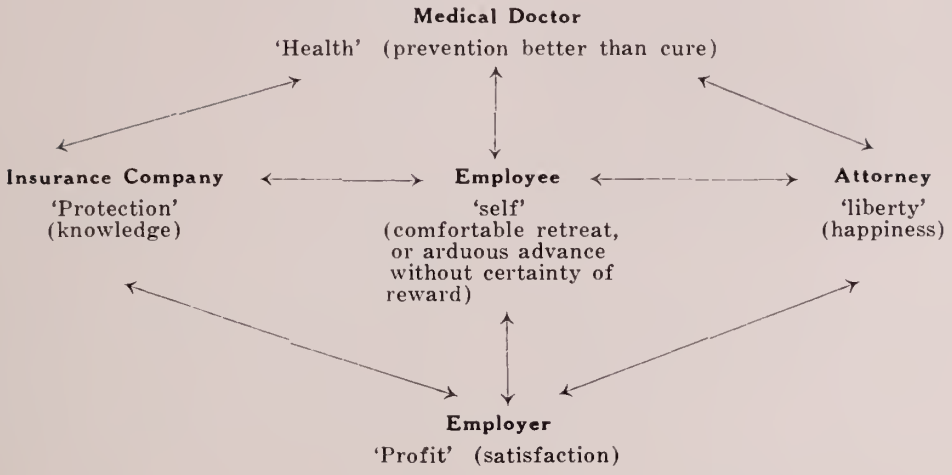
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* Presented at the Symposium on "Personal Injury Neurosis", February 24, 1962, at Burke Hall, University of Southwestern Louisiana, Lafayette, La., sponsored by the Louisiana Association for Mental Health.

† Surgeon, Lake Charles, Louisiana; Cl. Instr., Department of Surgery, LSU School of Medicine; former President, Southwest Chapter, Louisiana Association for Mental Health.

Figure 1.

A Slowly Evolving Socio-Economic Problem



THE LAW

Collectivism (or Socialized)

1st	Communication	(Divide and Conquer - Socialist scheme)
2nd	Knowledge	(Medico-Legal, Socio-Economic)
3rd	"The Will"	(Faith)
4th	Maintain reasonable return on investment (Capitalist system)	
5th	Better Suggestions for living (with compensation, not fixed fees)	

centuries ago in Europe. Our ignorance of this new illness can be compared to the ignorance of that period regarding syphilis, which today is capable of complete eradication because of the diagnostic tools, therapeutic facilities, drugs and understanding of a once incomprehensible malady.

Role Played By Society

Unfortunately as yet, only a relatively small body of scientific knowledge has accumulated as regards neuroses. Ultimately, experience and wisdom will produce the answers to the complex problem before our society. It will become necessary to recognize, as Edmund H. Volchart[2] in a symposium on the sociology of medicine has brought out, that the society in which a person lives plays a big role in determining the nature and frequency of his illnesses. We are all aware of the society-spawned attitudes toward such obvious health - affecting practices as industrial air pollution, the acceptance of smoking as a routine, and the stress of changing social demands. Volchart has pointed out that many societies invite a person to be sick by reactions of sympathy, protectiveness and release from obligations. Under these circumstances, sickness has a certain attractiveness as an escape from stress. Over the centuries, man has struggled for survival, productiveness, and satisfaction. Today in American society, the struggle for survival as far as the basic and elementary wants of food, shelter, and clothing is being eliminated by the remarkable effects of an industrial revolution. The problems of productiveness and satisfaction are still the major socio-economic questions of the day. These problems affect if not directly produce, many of the neuroses following injury today.

It is only through seminars of this type that a better understanding of the tools at our disposal, the means of communication, and each player's interdependent role is to be fully evaluated and understood. Knowledge and wisdom will come from experience displayed by the members of this symposium and those of you who will ask questions and bring concepts to the floor. The great importance of the will, that mysterious ethereal force often com-

pared to the extra man on the football or baseball team, must be recognized as a potent factor in the understanding of mental disease. Is the employee of today thinking of a comfortable retreat; or is he, as did mankind in centuries past, seeking an arduous advance without certainty of reward? Only a full faith in better things to come, in place of materialistic monotony, will result in a forward thinking individual.

Our present American society has been based upon a capitalistic system, with the feeling that it is better to maintain a reasonable return on the investment through competitive enterprise rather than establish fixed fees and extensive government controls. We are searching for better suggestions for living, with compensation proportionate to the production and satisfaction given to our fellowman. Each of us looks to our own field; the physician concerned primarily with preventive medicine and health; the attorney seeking the liberty and happiness of his client; the employer attempting to satisfy his customer and establish a profit in his undertaking; the insurance company attempting to protect and insure through analysis of our present society; and finally, the employee, who seeks not only survival, but productiveness and personal satisfaction. The law, reflecting the opinion of all parties, should periodically be amended, to meet the growing demand and knowledge created by better understanding of mental disease.

Problems Encountered

Two of the great problems in the field of law, which I feel must be amended in the years to come if we are to advance in our understanding and treatment of neurosis following injury are first, that diseases of the mind are not compensable on the basis of organic disease, such as a fractured femur, at least not at the present time. Secondly, that diseases of the mind are not necessarily associated with inability to work. By working together, we can create effective laws in understanding man as a bio-psycho-sociologic entity. As new tools of understanding become readily available, such as those revealed by Gene Usdin and Herbert Modlin[3] during this discussion, mankind can be expected to slowly resolve the problem of neurosis following injury.

Finally, we are currently emerging as a society in which we are admitting that everyone must be cared for through the force of legislative action. Witness the full cycle of Workmen's Compensation Law from its conception as a measure protecting the employer from tort litigation, to its acceptance today as a legal means of protecting every working man from every kind of injury or illness, including mental disease. This is, of course, "welfare statism". Surely none of the involved parties can expect to escape from the consequences of this socialistic thinking.[4]

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1. Jordan, E. O. and Burrows, Wm.: Textbook of Bacteriology, page 549, W. B. Saunders Co.: Phila., 1942.

2. Volchart, Edmund H.: Reported in Medical Tribune, February 5, 1962, re: Symposium on "Sociology of Medicine" at American Association for the Advancement of Science, Denver, Colorado.

3. Since the excellent presentations of these psychiatrists at the Symposium, another noteworthy contribution to this problem has come to my attention in a "Bill of Rights for the Mentally Ill" by Thomas S. Szasz, M. D.: "Civil Liberties and the Mentally Ill", Cleveland-Marshall Law Review, 9:399, September, 1960.

4. Also passed amongst attorneys, physicians, educators and industrial personnel present were the following items: "Who'll Do the Work?", "Hymn to the Welfare State".

Who'll Do the Work?

Chicago Sun-Times

This is an age of statistics. There are so many of them, of so many different kinds, that at times it seems we are in danger of drowning in a sea of statistics that threatens to engulf us on every side.

Accordingly, we were amused the other day by a bit of statistical horseplay that a friend was kind enough to send to us. We will concede at the outset that the statistics in this case are wholly assailable, but the conclusion is one with which we sometimes find ourselves in agreement.

POPULATION BALANCE SHEET
Oct. 1, 1958

Population of United States	175,000,000
Population over age 65	57,300,000
People left to work	117,700,000
People under age 21	64,700,000
People left to work	53,000,000
Government employees	24,000,000
People left to work	29,000,000
People in armed forces	12,000,000
People left to work	17,000,000
City and state workers	16,800,000
People left to work	200,000
Insane and in hospitals	126,000
People left to work	74,000
Bums and drunks	62,000
People left to work	12,000
In jails and prisons	11,998
People left to work	* 2

* You and me, and you better get busy as I'm getting sick and tired of running this country alone.

Hymn to the Welfare State

AN ANONYMOUS, presumably young, wit of the Cambridge University Medical Society penned the following "revision" of the most famous Psalm in 1957:

The Government is my shepherd,
Therefore I need not work.
It alloweth me to lie down on a good job.
It leadeth me beside still factories;
It destroyeth my initiative.
It leadeth me in the path of a parasite
for politic's sake.
Yea, though I walk through the valley
of laziness and deficit spending,
I will fear no evil, for the Government is
with me.
It prepareth an economic Utopia for me,
by appropriating the earnings of my
own granchildren.
It filleth my head with false security;
My inefficiency runneth over.
Surely the Government should care for
me all the days of my life!!
And I shall dwell in a fool's paradise
forever.

Bulletin Los Angeles Medical Society, Aug., 1960

The Best, Not the Cheapest, Drug

The trade-name behind which a firm places its reputation and its assurance of quality and purity allows me to make my selections quickly and with confidence so I can get the best response with the chosen medications for my patients' needs. The essence of medical practice is the response of the physician to the individual needs of the individual patients. Professional judgment should not necessarily be qualified on the basis of what is cheapest.—Paul D. Foster, M. D., President, California Medical Association Council, in **California Pharmacy**, Oct. 1961.

Bladder Neck Obstruction in a 6 Month Old Hemophiliac Infant: Successful Surgical Repair With The Aid of Fibrinogen Rich in Factor VIII*

• An account of the use of fibrinogen rich in Factor VIII to successfully control bleeding in a six month old hemophiliac operated upon for bladder neck obstruction.

ALTON R. IRWIN, M. D.‡
W. B. LILES, M. D.§
R. J. BLANCHARD, M. D.⊙
Monroe

PATIENTS with hemophilia always pose a difficult problem when they must undergo a surgical procedure. The usual methods of attempting to control hemorrhage in such patients have consisted of administering fresh blood or plasma, or a "lyophilized" plasma† reconstituted with sterile water, or fresh frozen plasma. These methods have occasionally been successful, but have limitation in that the volume of fluid that can be safely infused into a patient may prohibit complete correction of the coagulation defect.

Recently McMillan, Diamond, and Surgenor[1, 2] found that certain lots of a commercially available fibrinogen (Cohn's fraction I of plasma) were rich in factor VIII, or antihemophiliac factor (AHF). They then demonstrated its usefulness in the control of hemorrhage in a series of 15 hemophiliac patients, 8 of whom were operated upon. They commented on the frequent failure to obtain satisfactory hemostasis in surgical patients by methods previously available. They discovered that effective hemostasis could be obtained during surgery by maintaining plasma A H F activity at 30 to 60 per cent of normal, and postoperative hemorrhage could be averted by maintenance of A H F activity at 15 to 30 per cent of normal for 10 to 14 days postoperatively. They were able to measure plasma A H F activity by rather elaborate laboratory techniques that would not be feasible in the ordinary hospital laboratory. However, the following case report illustrates that this substance can be used successfully in any general hospital without use of the refined laboratory controls utilized by McMillan:

Case Report

A white male infant was delivered without complication on July 22, 1961, weighing seven pounds six ounces. There was no family history of hemorrhagic tendency. On the third day of life, a circumcision was done, after which there was slightly more than the usual oozing of blood. On the day after discharge from the hospital, the circumcision site began bleeding again but stopped spontaneously within a few hours.

At nine weeks of age he developed fever and pyuria. He was hospitalized for treatment of a urinary tract infection. A residual urine volume was 20 ml. An intravenous pyelogram was unsatisfactory; a cystogram revealed a normal bladder contour without trabeculation or reflux into the ureters. Cystoscopy was attempted but was unsuccessful. A meatotomy was done without any unusual hemorrhage. He was then treated as an outpatient for his urinary infection and followed closely.

At three months of age a heel puncture was done to obtain a blood sample for a urea nitrogen determination. There was unusual bleeding

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* Presented before the Eighty-second Annual Meeting of the Louisiana State Medical Society, May 9, 1962, Monroe, Louisiana.

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following the heel puncture that did not stop after prolonged pressure. Since veins were not readily accessible at that time, thorough investigation for a hemorrhagic tendency was not carried out. Vitamin K was given parenteraly, but the bleeding did not stop until about nine hours later.

On January 11, 1962, at 6 months of age, he developed a swollen, discolored right thigh. There was no history of trauma. Roentgenologic examination was normal except for soft tissue swelling. A finger puncture was done for a blood count, following which there was prolonged bleeding. He was then hospitalized for investigation of his bleeding disorder. Blood was drawn from a scalp vein without stasis using the two syringe technique.

The diagnosis of hemophilia was established by the following findings: (1) prolonged coagulation time, (2) normal prothrombin time, (3) abnormal prothrombin consumption, (4) abnormal thromboplastin generation time when the patient's barium sulfate adsorbed plasma was substituted into the system of reagents, (5) normal thromboplastin generation time when the patient's serum was substituted into the system of reagents. These tests indicated a defect in a plasma factor necessary to the formation of thromboplastin and that the specific defect was a deficiency in A H F, but not in P T C or P T A. The thromboplastin generation test was done with reagents manufactured by Warner-Chilcott. Laboratory findings are summarized in the accompanying table. (Table 1)

During this hospitalization a cystogram showed trabeculation of the bladder with rather marked reflux of dye up the right ureter and moderate hydronephrosis and hydroureter. The roentgenologic findings were strongly suggestive of a bladder neck obstruction. Surgical correction of the bladder neck obstruction was considered essential to prevent further damage to the genitourinary tract.

In order to assess the efficacy of the fibrinogen in correcting the coagulation defect in the patient, a test dose of 1 gram, reconstituted with 100 ml. sterile water was given intravenously over a thirty minute period. Two hours later a venous blood sample was collected. The coagulation time, prothrombin consumption, and thromboplastin generation tests indicated that this fibrinogen fraction of plasma was effective in correcting this patient's coagulation defect in vitro.

On January 23, an hour prior to surgery, 1 gram of fibrinogen reconstituted in the afore-

COAGULATION STUDIES

Test	Before Fibrinogen	After Fibrinogen	Normal
Lee & White Coagulation Time (3 tube)	79 min.	11 min. 55 sec.	9-15 min.
Platelet Estimation from Stained Smear	Normal in number and morphology	Normal in number and morphology	
Prothrombin Time (One Stage Quick)	13 sec. or 100%		13 sec. = 100%
Prothrombin Consumption	15 sec. 27%	88%	25 sec. 80-90%
Thromboplastin Generation TGTR (Warner-Chilcott)	Using the patients $BaSO_4$ adsorbed plasma 30 sec. at 6 min. incubation	Using the patients $BaSO_4$ adsorbed plasma 16 sec. at 6 min. incubation	9-16 sec. at 6 min. incubation
	Using the patients diluted serum 10 sec. at 6 min. incubation	Using the patients diluted serum 15 sec. at 6 min. incubation	9-16 sec. at 6 min. incubation
Fibrinogen (Quick)		876 mg %	250-400 mg %

mentioned manner was administered intravenously. A polyethylene catheter was inserted into the right saphenous vein without any evidence of unusual bleeding whatever. This catheter was kept open with a slow drip of dextrose solution.

A #10 infant urethro-cystoscope revealed a symmetrical contracture of the bladder neck, with hypertrophy of the trigone and early trabeculation of the bladder.

A Bradford-Young bladder neck revision was then done, along with excision of a segment of the posterior vesical lip. At no time was bleeding a problem.

Postoperatively, fibrinogen injections of 1 gram each were given approximately every twelve hours for the first forty-eight hours. Subsequently, the frequency of injection was reduced to 1 gram every twenty-four hours on January 25, 26, 27, 28, 30, 31 and February 2. There was gross hematuria during the first several days postoperatively, but this was not judged to be in excess of the usual postoperative hematuria following a bladder neck operation. There was never an oozing from the suprapubic incision or from the cutdown site over the saphenous vein. The hemoglobin dropped, however, to 7 grams per 100 ml., on January 29, six days postoperatively. On this day, 200 ml. fresh whole blood was given. The observation was repeatedly made that for about twelve hours after administration of the fibrinogen, the urine was clear and then became progressively more bloody. On February 3, the suprapubic catheter was removed without precipitating any bleeding. Voided urine continued clear until February 6, when gross hematuria recurred, four days after the last injection of fibrinogen and fourteen days after surgery. On February 7, 50 ml. of reconstituted lyophilized plasma was given intravenously. This had no effect on the hematuria. We had no more fibrinogen available, so on February 8, 150 ml. of fresh whole blood was administered. The hematuria ceased and has not recurred to this date, two months after discharge from the hospital. He has been treated intermittently with antibiotics for urinary infection, but his voiding pattern now seems to be much more normal. He has had several rather large hematomas that have developed as a result of insignificant trauma.

Discussion

McMillan et al[1, 2] reported on a series of 15 patients with classic hemophilia in whom they demonstrated the efficacy of Cohn's fraction I of plasma in correcting their coagulation defect, provided they did not have in vivo inhibitory factors against factor VIII, or antihemophiliac factor. They commented upon the apparently innocuous hyperfibrinogenemia that occurred with regularity in their patients. In two of them, hemolytic phenomena were associated with fibrinogen levels over 1000 mg %, but this apparently caused no difficulty.

We did not attempt to quantitate the antihemophiliac factor in our patient, but used instead an empirical dosage schedule suggested by Dr. Clyde Strickland, director of Research Laboratories at Merck Sharp and Dohme Company. Coagulation times and other measurements of blood coagulating ability were not checked frequently because of the technical difficulty of drawing blood samples from this small infant. One fibrinogen level that was done about twelve hours after injection of 1 gram of fibrinogen was 872 mg %, which would indicate that in all probability our patient did have fibrinogen levels in excess of 1000 mg % shortly after injection of the material. We observed no evidence of any hemolysis, however, and at no time was there any untoward reaction during administration of the material.

The use of this material seems particularly advantageous in small children such as this one, because with a relatively small volume of injected material the antihemophiliac factor can be appreciably increased. The A H F in this fraction of plasma is concentrated about seven times in comparison to that of fresh plasma. McMillan et al[1, 2] demonstrated that A H F activity could not be increased above 30 per cent of normal while using optimal doses of fresh-frozen plasma, while levels of 30 per cent to 60 per cent were consistently observed in patients receiving the concentrated material. Although major surgical procedures have been successfully undertaken on hemophiliac patients using fresh blood or plasma, hemostasis is generally unpredictable and postoperative hemorrhage common. In a small infant such as this one, excessive bleeding makes the surgery technically much more difficult, and replacement of blood lost is difficult to estimate. We were particularly surprised at the minimal amount of bleeding that

occurred at the time of surgery, which enabled the surgeon to operate in a practically bloodless field.

Summary

A six month old infant with classic hemophilia was successfully operated upon to correct a congenital bladder neck obstruction. Satisfactory hemostasis was maintained during surgery and through the postoperative period with the aid of injection of a commercially available fibrinogen fraction of plasma with high content of antihemophiliac factor.

Acknowledgment

We wish to express our gratitude to Dr. S. Clyde Strickland and the Merck Sharp and Dohme Research Laboratories for supplying the fibrinogen used in management of this patient.

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The Best Drugs are Yet to Come

There is no question that in the United States, it has been the pharmaceutical companies who have done the major research work in the discovery and the initial testing of the drugs we call the tranquilizers. I think we owe a great debt of gratitude to these companies for this research job. I have the impression that when this whole new concept of the treatment of mental illness by drugs was begun, had the control of it, and particularly the "efficacy" of these drugs been a matter of jurisdiction by the federal government, my guess is we would not have had them. I think it was the competitive research activities among the drug houses that led to these—and fortunately for all of us in this field, still continues. My conviction is that the best of the drugs is probably yet to come, and the chances are good that it will come out of the research, the competitive research if you will, among the drug houses.—William C. Menninger, M. D., The Menninger Foundation, to Senate Subcommittee on Antitrust and Monopoly.

Intranasal Synthetic Oxytocin as an Adjunct in Breast Feeding*

• Lactation is explained and the difficulties in nursing for some mothers. A new adjunct lends help.

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IT is obvious that fewer women are nursing their infants than in former days.[1] This is true in spite of the benefits of breast feeding. For the human infant, human milk must be the ideal food.[1-5] The soft easily digested curd is important, as are the protective antibodies transmitted by this route. The psychological impact of this maternal function, simple as it seems, must be of incalculable value to the infant and its mother.[1] The stimulus of sucking causes the release of oxytocin which aids uterine involution,[9-11] and breast feeding allows the breast to fulfill its natural function.

Difficulties

One of the first difficulties encountered in the area of breast feeding is ignorance. We are presently in an era where the majority of our patients' mothers did not nurse and therefore have little practical knowledge to pass on to their daughters. Consequently, education of the prospective mother is important. The patient must understand that human breast milk is naturally thin but more nutritious and more digestable than substitutes. She must also understand that in the neonatal period the feeding requirement and therefore the feeding schedule of the infant will be frequent. This is true because the feedings are rapidly utilized by the anabolic processes. This is normal. Simply because the child is often hungry does not mean that breast milk is of poor quality but conversely that it is ideally serving its purpose—to rapidly feed the anabolic fires.

Another difficulty to be overcome is embarrassment. Formerly, it was not uncommon to nurse in public but present mores make this completely unacceptable. Most mothers of today are uncomfortable and nervous even when nursing in full view of the immediate family. Tension interferes with breast feeding.[9]

A major untoward factor is the more definite emergence of the female as an economic unit who must produce work either at home or in a salaried capacity elsewhere. Among other problems is the fact that some drugs are partially excreted through the breast, and it is often more time consuming to breast feed than to feed the infant with substitutes. Conversely, several important factors are necessary for successful breast feeding. One of the most important is a *desire on the part of the mother to nurse.* Attention to details and absolute cooperation between patient and physician are necessary. This is not possible if the mother does not wish to breast feed. She must also be taught how to nurse, for example, five to ten minutes on each breast *when* the infant demands. Care of the nipples and good support to the breast are also to be emphasized as well as an understanding of the physiologic demands of the newborn.

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* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 8, 1962.

The synthetic oxytocin used in this study was Syntocinon Nasal Spray.

This study was aided by Sandoz Pharmaceuticals.

Milk Production

Milk production in the normal, healthy female is a matter of adequate fluids and nutrition accompanied by suckling with adequate emptying. The suckling and emptying of the alveoli is the stimulus for renewed milk formation. True milk does not usually appear until the third day, at which time it may appear with a "rush" in primigravida.

All the milk in the breast cannot be removed by the mechanical action of suckling or milking, nor is it available. Only that milk in the large lactiferous ducts and sinuses can be removed by this means.[12-13] The major portion of milk production is retained in the alveoli and finer ducts and can only be forced into the larger sinuses by the contractile system of myoepethelial cells (basket cells). This is a reflex action. The afferent arc is nervous and initiated by suckling as a result of which the hypothalamus (which can be regarded as the reflex center) stimulates the neurohypohysis to release oxytocin which is the mediator that causes the basket cells to force milk into the larger ducts and sinuses This is known as the milk let-down or milk ejection reflex. Apparently only after this takes place can the infant efficiently empty the mammary glands.[10-13] However, tension and stress interfere with this reflex while oxytocin aids the process since this hormone is the mediator in the milk ejection reflex.[9-11, 14]

The administration of natural or synthetic oxytocin therefore initiates this reflex and allows the milk to be available to the infant. It was felt that the routine administration of oxytocin could aid in shortening the feeding time and thereby reduce trauma to the breast—serving as an aid to breast feeding, especially in nervous, tense mothers. Twenty-five per cent

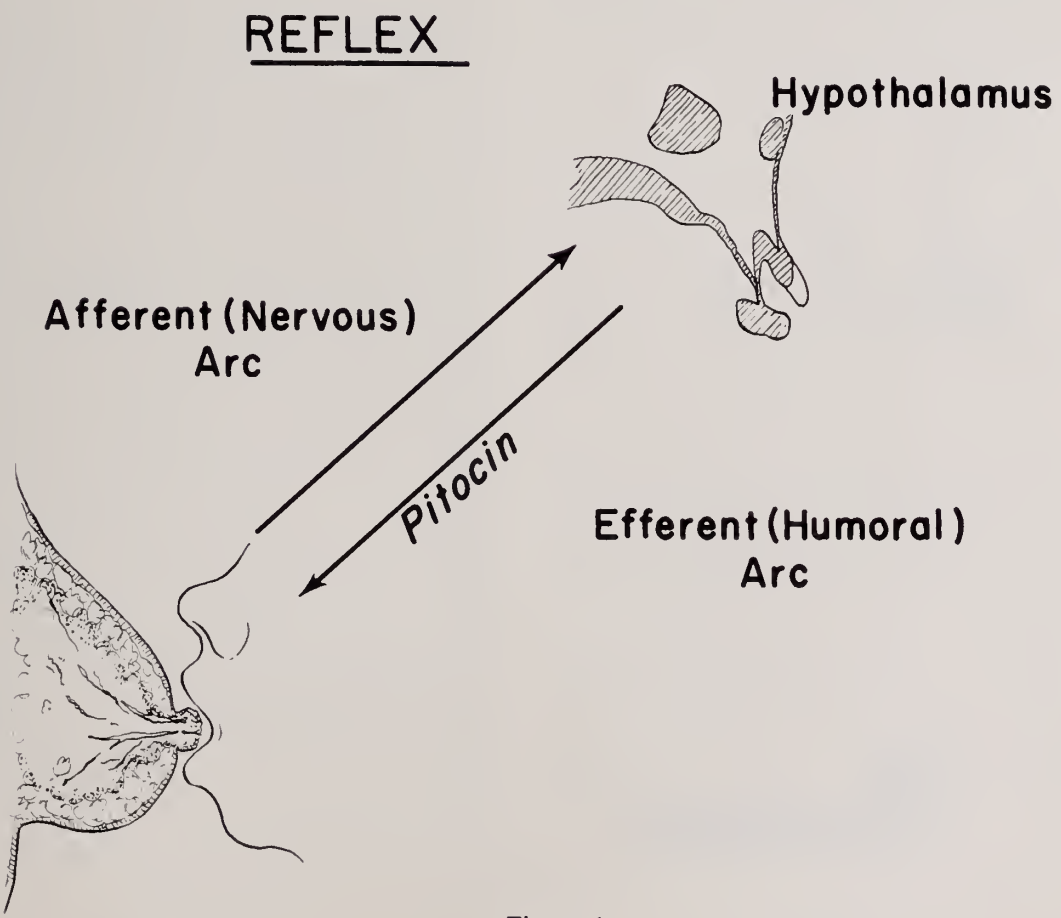


Figure 1

of our private patients expressed a desire to nurse.

Material

Sixty-four patients who expressed a desire to nurse were evaluated. Twenty-two were clinic patients from the Sara Mayo Hospital in New Orleans. Forty-two were private patients.

Methods and Results

Since it would be impractical and undesirable to inject oxytocin each time the infant was taken to breast, a simpler method was necessary. Intra-nasal self administration seemed to be a satisfactory answer. Accordingly, patients were supplied with a plastic container of synthetic oxytocin spray and nursing instructions. The container could be squeezed to deliver either drops or a spray containing 40 i.u. syntocinon per c.c. A single spray was administered to each nostril five minutes before feeding time. The time for the appearance of the first drop of milk was noted in 23 instances (Figure 2).

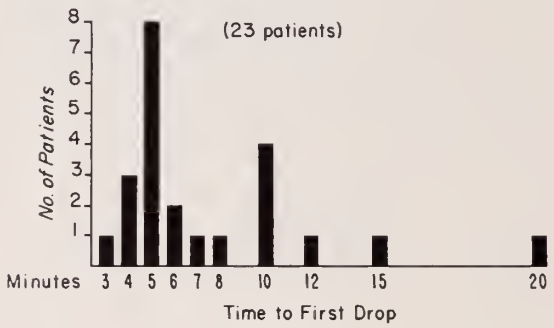


Figure 2

The infants were taken to breast every four hours and allowed to nurse five minutes on each breast. The number of these patients who could successfully breast feed is recorded in Figure 3 with the complications.

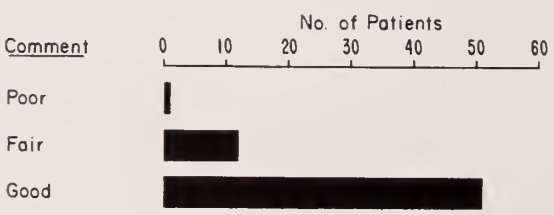


Figure 3

The average time for the let down reflex was six minutes after the administration of the nasal spray. Using this method as an adjunct to nursing allowed 97 per cent of the patients initially desiring to nurse to do so. There were no fissures or breast abscesses. Those who voluntarily stopped did so for personal reasons such as convenience or because "it did not seem to be strong enough." One patient continued to use the spray for three months without ill effect. She has now delivered again and again successfully nursed using this routine. In addition, one patient referred from elsewhere with a galactocele was treated successfully with the spray.

Comment

Women can successfully breast feed today. They must, however, have a desire to nurse. They must also understand that a newborn must be fed often. They must know that human milk is naturally thin and watery but there can be no possible better food for the newborn. The most crucial period for the nursing mother is the first week or ten days when she is nervous and tense and the demands of the infant are great.

During this time it is helpful to initiate a definite milk let-down. The nasal spray method is practical and effective. This will help to make the milk available to the infant in spite of the mother's tense state. It will allow for rapid breast emptying so that nursing can be limited to five minutes on each breast. This in turn minimizes trauma, and therefore, fissures and breast infection. It is also our impression the breasts are more completely emptied. Since injections are not practical, a simple, safe method of administration is via the nasal spray of synthetic oxytocin.

In addition, none of our patients showed any signs of subinvolution at six weeks which agrees with findings of others. They were warned that after use of spray and with breast feeding some cramps (after pains) could be expected in the lower abdomen. One patient used the intranasal spray for three months with no ill effects. One year later she has again delivered and

nursed successfully. The nasal spray seems to be a safe, useful adjunct in breast feeding.

Summary

A consideration of some of the problems associated with breast feeding has been presented.

It has been proposed that the phychologic impediment to the flow of milk from the breast can be overcome by exogenores synthetic oxytocin.

Sixty-four nursing mothers were included in a study employing synthetic oxytocin intranasal spray as a prime stimulus to the flow of milk. The time lapse from administration to flow averaged six minutes.

The technique employed aids the nursing mother in accomplishing successful, rapid emptying of the breast and satisfactory breast feeding.

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Discussion

Dr. John Tanner (Harvey): The milk ejection reflex governs the expulsion of milk from the alveoli into the larger ducts of the breast, thus making it more available to the baby. This reflex is easily inhibited by emotional stress, thus interfering with the ability of the baby to withdraw sufficient milk from the breast.

Women who lactate successfully are more likely to have good functions of the milk ejection reflex. The clinical signs of its occurrence are recognized by; (1) milk dripping from the breasts before the baby starts to nurse; (2) milk dripping from the breast opposite the one being nursed; (3) uterine cramps during nursing; and (4) cessation of nipple discomfort during a feeding as the baby begins to obtain milk.

Prevention of inhibition of the milk ejection reflex can be accomplished by (1) privacy and freedom from embarrassment during nursing; (2) peaceful surroundings and avoidance of controversy; (3) emotional support from physician and family; and (4) intranasal oxytocin preceding each feeding.

Intranasal oxytocin is a valuable adjunct to breast feeding. Many mothers who would ordinarily be unable to breast feed may now do so. The stress and strain of our modern society is reflected in the nursing mother, who is subject to many tensions and psychic trauma. This makes breast feeding difficult and consequently, a stimulus such as this may permit high strung emotional patients to nurse.

Intranasal oxytocin satisfies two prime requisites, (1) enhances milk production (2) stimulates uterine involution. Milk production by the nursing mother is made easy and convenient. With careful instruction by the physician, nursing becomes remarkably easy for the mother. Within six minutes of administration, the baby is allowed to nurse, and breast emptying is rapid. The breasts do not tend to become engorged between feedings and mother and baby are happy. As for involution of the uterus, this progresses at a rate more rapid than in the nonnursing mother. This is of distinct value, as post partum morbidity is shortened.

The mothers who have used intranasal oxytocin as a stimulus to milk production have in most instances been delighted with the ease with which breast feeding the baby is possible.

As time goes on, more widespread use of this stimulus will occur and many happy mothers and healthy babies will be the end result.

Personal Oral Hygiene; A Serious Deficiency in Dental Education

• Care of the teeth is important, but the proper care that will prevent disease and damage is very little understood.

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EVERY person needs to keep his or her natural teeth healthy and normally functional throughout a potentially long life time. No one does now. The necessary information is not available at the present time; even to those who need it, want it and would follow it.

The incidence and the rate of advancement of the lesions of both caries and periodontoclosia — the principal diseases affecting the teeth and their related tissues—are influenced largely by the very variable personal oral hygiene practices of each different individual. Even inadequate or inappropriate methods of home care of the teeth usually do some good, but complete prevention and control can be achieved only by application of the necessary effective method.[1, 2] In the light of the facts as to the local etiological and pathological conditions in each of these two diseases, they can not be entirely prevented unless this particular method of personal oral hygiene is followed. It differs substantially from, and in vital particulars it is quite the opposite of, methods generally advocated[3] and followed.

If the above statements are true, and I am prepared to substantiate them to the entire satisfaction of any competent person who is willing to make the necessary investigation, then countless millions of the American people every day have active, advancing, ultimately destructive dental disease which could be prevented if they could have, and would follow the necessary correct information relative to personal oral hygiene.

People rely upon the dental profession for information relative to their dental health. For the most part they seek and receive treatment of disease and repair of damage that has already taken place. They do not know or realize that such disease damage could have been prevented. More important, at the moment, they do not know that further disease and damage therefrom can be, for all practical purposes, entirely prevented in the future. The dentist does not know this either. Therefore he is not prepared to give his patients the advice and information in this regard they have to have in order to maintain the highest degree of dental health.

Unfortunately there are too many people who are complacent or unconcerned about preservation of their teeth. This results largely from lack of information as to the importance of the teeth and the seriousness of the diseases from which they suffer and are ultimately lost. There are many others who *are* concerned about the welfare of their teeth and would adopt and follow the necessary method of personal oral hygiene to preserve them if, indeed, they could know what that is. Their information in this regard must come, either directly or indirectly from the dental profession upon which they depend for treatment, restorations and advice.

Dentists can pass on to their patients only such advice and information as they themselves know. A dentist cannot be expected to successfully teach his patients effective personal oral hygiene, and in-

* Studies promoted by facilities to which the author has had access at the Tulane University School of Medicine and by aid for equipment and supplies provided by the University.

fluence them to follow it, if he does not know it and follow it himself. He can be expected to bring to his patients practical application of only such facts relative to the cause and prevention of dental disease as he learned in the dental school.

The exact method of personal oral hygiene which is absolutely necessary for the highest degree of oral cleanliness and dental health is not taught, as must be done sooner or later, in the dental schools of the country. This means that those who graduate now, and those who graduated previously, are not prepared to successfully instruct their patients how to prevent the diseases of their teeth or to prevent further advancement of existing disease. The purpose of this paper is to call attention to this serious deficiency in dental education; also to urge responsible leaders in this important field of human health-welfare to investigate this matter and get the facts in this regard for such use of the information as they wish to make of it in the future.

Microscopic Study Necessary

Both caries and periodontoclasia are caused by microscopic organisms. The lesions at first are microscopic in extent, they advance microscopically, the tissues involved are composed of microscopic elements and the destructive processes, are microchemical. Under these circumstances the dental student can learn, and know of his own knowledge, the etiological and pathological conditions at the locations where the lesions originate and advance, only through proper study and observation of suitable material under the microscope.

The binocular dissecting microscope is essential, as is also the compound microscope. Each student must have adequate access to, and make much use of, these instruments; of course, under competent instructor guidance. Without full use of these specific facilities the students' information as to the etiological conditions which must be prevented to prevent or control these diseases, will be secondhand at best, often confused and too often incorrect.

Study of large numbers of extracted tooth specimens is absolutely necessary. These are available from extraction clinics. Formalin preserved specimens are suitable for almost all purposes. Quite simple technical procedures are adequate, and in fact preferable, for most purposes.

Study of Caries

Early stage caries lesions (chalky enamel) must be prevented and further advancement of such as have already occurred must be controlled, if damage from the more advanced stages of the disease (cavities) is to be prevented. The nature and the prevalence of early stage caries lesions can be learned and appreciated by the student by studying many, and a great variety of such specimens with the aid of the dissecting microscope, but not without this procedure.

A good way is to dip the specimen in hydrochloric acid solution (5 to 10 per cent by volume) for half a minute (or longer) to set free the enamel cuticle. Dip gently in water and then in a weak solution of acid fuchsin (or other stain). Examining such a tooth preparation under the dissecting microscope one can tease off or float off the loosened enamel cuticle and make preparations of pieces of it for other microscopic study. He will no longer be in doubt or confused, as is usually the case, as to the presence of enamel cuticle.

Chalky enamel can be seen and worked with under the dissecting microscope much more satisfactorily after the cuticle (with its adhering bacterial film) has been removed. In studying large numbers of specimens (as everyone should do) it is convenient to prepare them by first dipping the tooth in acid and stain as above, and then brush it off with a toothbrush to remove the cuticle. By working with such preparations one learns the very much greater incidence of such lesions and their relation to more advanced lesions better than he could possibly know otherwise. Sections cut through chalky

enamel lesions, examined under the dissecting microscope, enable the student to see for himself the way in which this condition (caries) extends and advances into the tooth.

Measures to prevent early stage caries must be designed to prevent or minimize accumulation and retention of bacterial film (plaque) at the particular location. The student must learn the nature of this material. With the aid of the dissecting microscope small particles may be picked with a suitable teasing needle from any location of interest and prepared for further examination under the high power microscope. In this way the student learns, and knows of his own knowledge, the nature and characteristics of the bacterial film pad, without which caries does not develop and against which effective personal oral hygiene methods must be applied.

Study of Periodontoclasis

Periodontoclasia is a universal disease of man,[4] originating in childhood and never ending as long as the individual has any teeth left. The cause is foreign material — bacterial film and usually calculus — attached to the surface of the tooth at the entrance to, and within, the gingival crevice. As the chronic inflammatory process continues the periodontal tissues are slowly destroyed and the gingival crevice (now a pyorrhoea picket) advances apexward.[5]

The only way the student can learn, and know of his own knowledge, how this disease advances is by studying, by appropriate technic, large numbers of extracted tooth specimens under the dissecting microscope. There is a demonstrable line[6] —the zone of disintegrating epithelial attachment cuticle (zdeac)—to be found extending part way or entirely around the tooth. This line is located at the very bottom of the gingival crevice (periodontoclasia lesion) when the tooth was in the mouth and serves as an accurate landmark indicating the exact location to which the lesion had advanced. It indicates the exact location of the outer border of the receding epithelial attachment and of the inner (apexward) border of the subgingival bacterial film on the tooth before it was extracted.

First, one should thoroughly familiarize himself with this line. The best procedure is to stain the specimen in crystal violet (0.5 per cent aqueous solution) for one-half minute (or longer). Then brush it off gently with a soft toothbrush with round or smooth ended bristles. This removes most of the bacterial film and other loosely attached material. It does not remove the zdeac, which may now be studied under the dissecting microscope. One should observe this line (now stained) on many different tooth specimens and learn to recognize and identify it satisfactorily on such preparations.

The brushing does not remove the calculus on the tooth. Examining such stained and brushed off specimens under the dissecting microscope enables one to learn the close relation of the calculus[7] to the very bottom of the lesion. This is of great importance. Successful treatment, control and prevention of further advancement of the existing lesions of this disease requires that this subgingival calculus, especially the deeper part of it, be thoroughly removed by proper scaling.

After one is familiar with this landmark on stained and brushed off specimens, he can usually locate it on specimens stained but not brushed off. From such specimens under the dissecting microscope, he can pick particles of the soft bacterial film material attached to the tooth at any location desired with relation to the zdeac.[8] Examining such material under high magnification and from many different tooth specimens one learns, and then knows of his own knowledge, the nature and abundance of this bacterial foreign material on the surface of the tooth within the gingival crevice.

An effective method of personal oral hygiene must provide for removal or minimizing of this etiological material sufficiently frequently (at least once a day) to prevent reaccumulation of harmful quantities in the future. The only way

this could possibly be done is by proper application of the bristles of the right kind of toothbrush and the filaments of the right kind of dental floss to the areas to be cleaned. This is absolutely necessary for prevention and control of this disease.

Comment

Conclusions drawn from clinical trials of measures, remedies and procedures for the prevention and control of the principal diseases of the teeth are of limited use and often confusing and misleading. Clinical diagnosis and observations are concerned with the advanced (diagnosable) stages of the respective diseases and do not take into account the earlier stages. Measures for prevention must be based upon facts (and not guesswork) as to the microscopic etiological conditions at the locations where the lesions originate and advance.

The method of personal oral hygiene referred to above is necessary to prevent or minimize the local etiological conditions. Anyone knowing of his own knowledge, through microscopic study, and understanding these conditions would also know that approximately this exact method would not only be necessary but that it would be effective. He would not have to depend upon clinical trials.

Summary

Attention has been called to a serious deficiency in dental education at the present time.

Those who hold responsible positions in the field are urged to make the necessary investigation and get the facts in this regard.

Brief mention has been made of some of the necessary steps to correct the situation.

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There's a Difference in Drugs

During the Kefauver Subcommittee's investigation of the prescription drug industry, over and over again, it was said that "generic equivalents" will give the American people the same top quality of medicine that is provided today by brand-name drugs. Is that statement true? Preparations of the same medicine made by different manufacturers are almost certain to be different. Differences in production methods, in the size of particles and in the type of binder or of coating can make marked differences in the drug's effects on the patient.—Editorial: **J. Iowa Medical Society,** Dec. 1961.

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Editorial

Tests of Renal Function Before Surgery

A little learning is a dangerous thing:
Drink deep, or taste not the Pierian spring,
There shallow draughts intoxicate the brain,
And drinking largely sobers us again.
Pope—Essay on Criticism

When surgery is planned, the effect of this procedure upon the homeostatic mechanisms must be considered. Important in this situation is accurate knowledge of kidney function. It is probable that we have access to more precise knowledge of the urological system than of any other organ system. A statement of the need and methods of appraisal of kidney function before operation has been presented in an effective and comprehensive article by Lapides.[1] His investigations and conclusions give valuable aid as to how to estimate the functional capacity of the kidney, and will serve as a guide in interpreting conditions of kidney deficiency that develop after the operation. His summary of the modern concepts of kidney function simplifies much that has previously been written on the subject.

The unit of function in the kidney is the nephron. There are one million of these in each kidney. The nephron consists of the glomerulus, proximal convoluted tubule, loop of Henle, distal convoluted tubule, and a portion of the collecting tubule. The capillaries of the glomerulus arise from the afferent arteriole and after leaving the glomerulus join to form the efferent arteriole. The only blood supply to the tubular portion of the nephron comes from the efferent arteriole. The important deduction from this is that any interference with the blood flow through the glomerulus compromises blood supply and the function of the tubular cells. The function of the glomerulus is to supply filtrate from the plasma. It is essentially the same as the plasma except for the absence of most of

the protein, the erythrocytes, leukocytes, and substances of large molecular structure. As the glomerular filtrate passes through the tubules certain substances are excreted into the filtrate by the tubular cells, certain substances are reabsorbed, and some are permitted to flow. The failure of glomerular filtration results in an abnormal increase in the blood level of nonprotein nitrogen, urea nitrogen, creatinine, sulfates, and phosphates. These substances are the metabolic breakdown products of proteins and are eliminated from the body, principally by the kidneys. The end products of carbohydrates and fats are carbon dioxide and water. These can be handled by the lungs and skin. The phosphates and sulfates, when there is an improper amount of accumulation may produce acidosis. The result is that the body attempts to neutralize the acids and develops a deficiency of sodium bicarbonate. When the impairment of glomerular filtration reaches the state of renal dysfunction, the condition has been called uremia.

The glomerular filtration rate must be reduced to approximately 25 per cent of normal before the end products of protein metabolism begin to accumulate appreciably in the extracellular fluid. This means that the BUN and NPN determinations remain approximately normal until 75 per cent of the total renal function has been impaired. Dependence, therefore, on the BUN prevents the clinician from deciding whether renal function is normal or whether the kidney has lost more than one-half of its glomeruli and is on the verge of causing uremia.

The BUN may be elevated when glomerular filtration is not at fault. This occurs in the breakdown of erythrocytes in the gastrointestinal tract or the body area, in dehydration, and in massive tissue necrosis. BUN may be normal when grave liver disease exists and urea cannot be formed.

The two dependable tests of kidney function in the survey before operation are the intravenous fifteen minute PSP and creatinine. Six milligrams of phenolsulfonphthalein is administered intravenously. For a period of one half to one hour before the test is initiated, the patients are instructed to start drinking fluids. By the time of the injection, the bladder will probably be full. At this time, the patient is not asked to void, but is instructed to void exactly fifteen minutes after the dye is given. Catheterization is usually not necessary.

The fifteen minute excretion of 30 to 35 per cent implies that both tubular and glomerular functions are 100 per cent of normal. This deduction is based on the following: PSP is primarily a test of tubular function. The function of the tubules cannot be normal unless the blood supply to the glomeruli is normal. If the fifteen minute PSP is less than normal, it may mean that tubular function is impaired, or that there is a delayed conduction of urine from the calyces to the specimen bottle. This may occur in hydronephrosis, hydroureter, and partial urinary retention. Aside from delay of conduction, a low fifteen minute PSP excretion may mean impairment of tubular function, such as may occur in pyelonephritis or interstitial nephritis. In such a case the glomerulus may not be affected. The need, therefore, is for a test to determine the status of the glomeruli.

The author relates experience and observations which many others will confirm that urea and endogenous creatinine clearances are invalid because of inaccurate urine collections. It shows, however, that when special arrangements were made for accuracy of urine collection the twenty-four hour endogenous creatinine clearances were normally approximately 140 $\pm$ 20 liters in twenty-four hours. He also showed that the creatinine clearances bore a straight line relationship to the serum level of creatinine, such that the creatinine clearance of 160 liters in twenty-four hours would correspond to a serum level of creatinine of 1 mg. per cent or less, and a serum creatinine of 2.0 corresponded to 25 per cent of normal glomerular function.

The author stated that in general, pa-

tients with a serum creatinine of less than 1.5 mg. %, or a fifteen minute PSP of more than 15 per cent will tolerate most major operative procedures quite well. Individuals with a serum creatinine of more than 1.8 mg. % should be regarded as doubtful risks. When the creatinine determinations and the fifteen minute PSP do not correspond in their interpreted significance it is an indication for a repetition of the tests and an indication for determination of the status of urinary flow in the individual.

This paper gives valuable guidance to the clinician.

[1] Lapides, Jack: Use of renal function tests in surgical practice, J. M. Assn. Georgia, 51:210 (May) 1962.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

UTOPIA IS NO BARGAIN*

Britain's cradle-to-grave welfare scheme evokes some sobering second thoughts on state vs. private insurance.

The biggest domestic economic problem in Britain today is the financing of her welfare state out of taxes. Apart from compulsory education, the welfare state includes compulsory state insurance for every citizen for all health requirements, including dental and ophthalmic treatment, plus state insurance for workmen's compensation, unemployment and all kinds of benefits for incapacitation from work.

The self-employed are excepted from unemployment insurance for the plain reason that they cannot be supervised in the hiring and firing of themselves! But they are not exempted from anything else. The retired have to pay for the services of the State's Health Service. Everybody who works for reward has to come under the compulsory state systems for retirement pensions, health services and workmen's compensation. All doctors and medical specialists operating the Health Service or any of its parts are paid directly by the state on the basis of the numbers of patients inscribed on their card indexes and of the treatments such clients get. Hospitals are run by regional or municipal boards for the state and under the supervision of the Ministry of Health. Employers are compelled by law not only to check off from their employees' pay envelopes the insurance tax such employees are due to pay, but also their state dues for the welfare state, to which the employer has to add his own contributions.

Accordingly the process is extremely costly and complicated for a nation with just under half its total population gainfully employed. The process is further confused by a rapidly growing proportion of people retired and retiring—15 per cent next year, rising to as much as 20 per cent by 1979. Most of these have to be kept by their younger, working fellows out of these latter workers' compulsory contributions to the state funds for pensions, plus those from their employers.

Inflation-Fed Costs Going Up and Up

As inflation pursues its career in Britain no matter what Government is in power, the welfare state and its financing become more and more of a built-in, inflation-fed, inflation-feeding process. Taxes and levies can never come down, can only go up more and more, as the state—no matter who is in power—finds the costs ever rising for doctors and dentists, nurses and equipment, buildings and drugs, fuels and civil servants, to say nothing of the growing number of pensioners.

This process was not foreseen during the Second World War when the coalition Government asked Sir William (now Lord) Beveridge to make his now famous report on social security. Lord Beveridge has since castigated successive Socialist and Tory Governments for not observing two cardinal features of his report, namely, his insistence on making the health and other social security services actuarially and properly funded, and secondly, on avoidance of what has

* Reprinted from the Journal of American Insurance, September, 1962, American Mutual Insurance Alliance, 20 North Wacker Drive, Chicago 6, Illinois.

British author Hutton, resident of the U. S. for five years, was an observer on the American scene when the JOURNAL arranged with him for this article. It is written out of his distinguished experience as an economist, lawyer and sociologist who has followed the pitfalls, disappointments and consequences of the British welfare state ever since it was attempted 15 years ago.

since become called "the democratic fallacy." That fallacy is the building of the welfare state's benefits into the political party structure, so that the two major parties vie with each other at the hustings in bidding for the votes of all welfare state beneficiaries.

These beneficiaries are (a) pensioners and near-pensioners (very important in an aging nation like Britain); (b) industrial working men and women (very important in a country where women at grandmotherly ages form larger and larger proportions of the working population); (c) young wives starting families; (d) all parents of children under working age (for the free school meals and other benefits, or family allowances to second and other children, etc.); and finally—whenever unemployment goes or stays up—(e) the workpeople afraid of losing jobs or of not getting them back.

Lord Beveridge and others, including this writer, pointed out more than 15 years ago (before the complete Health Service came into force and doctors were nationalized along with all hospitals) that if inflation persisted along with abandonment of the famous Beveridgian principle of actuarial funding, any and every Government would inevitably find itself forced to outbid the Opposition in a Dutch auction for welfare state benefits. Worse, whoever won that auction would have to find the funds to redeem electoral promises not out of contributions alone, but also out of the broad mass of the people's taxes.

Exactly that has regularly come to pass. Government is driven to all sorts of devices and stratagems to "raise the wind," both within and outside the regular finances of the welfare state. The Socialists began in 1950-51 only three years after the late Aneurin Bevan had imposed the Health Service and its administration upon the doctors. The Socialists made people pay a small sum for each prescription, though they had originally got all things ostensibly "free" against contributions and taxes. This has been carried farther by Tories, who have even been driven to invoke old wartime regulations about the nation's military security to conclude state bulk-buying of drugs from Italy and elsewhere, in order to force down the private enterprise companies' prices for their products used in the Health Service.

System Would Cost U.S. $55 Billion

Americans can gauge the extent of the fiscal problems of a blanket state compulsory system of all insurance — retirement, sickness, workmen's compensation, unemployment—if I put the proportional British problems in terms of America's national income and federal budget. If America made all these insurances compulsory and federal as Britain has done for nearly 15 years, excluding all education, it would require something like one one-tenth of the national income, or, say, $55 billion in taxes and contributions. Moreover it would have to be administered federally and centrally. That would mean unwinding the various 50 states' welfare and other relief services, apart from education. Benefits under a federal scheme would be administered so that they did not admit of wide variations in separate states, not only as pensions, but also as other like benefits under insurance for health services, unemployment, sickness, workmen's accidents, etc.

British Governments have found their greatest difficulties not in "raising the wind" for an ever-growing welfare state's benefits. Britishers grouse but pay up, are honest on the whole; they are patient as a people, they positively like queuing and traffic jams, and they never get together to protest to Parliament about anything. British Governments have found their main problems in keeping the terribly complex list of separate benefits roughly in step during the inflation.

First the swelling army of retired folk acted up, and demanded redress, whipped up by the Opposition, of course. That was a cinch, politically. No one gets the vote till he is 21; the youthful proportion of the nation was not growing so fast. But we keep our vote till death relieves us of it; and the old were—and still are—increasing at a breakneck pace compared to the working population. Secondly, immediately the pensioners got a bit extra out of taxes, up the Government had to put taxes and contributions on the working people, the employers, and the general body of taxpayers. This fed the fire of inflation. So thirdly, the expectant mothers, the poor receiving state relief (half of all state pensioners got some additional public relief or other), the sick, and the unemployed had to have their benefits raised. This in turn drove the Government in the next budget to raise contributions and taxes further. And so the merry partnership of inflation with rising benefits under the welfare state forged ahead. No one dared to reduce, curtail, or hold a line on anything, for fear of losing the next election. The welfare state inexorably came to take more and more of both the central and the local budgets, till it now takes one-third of all taxes, levies and compulsory state contributions and local taxes combined. Indeed, it takes over one-tenth of the national income, and over half as much again as the nation spends on defense. And all this excludes education costs.

No wonder Britain has had repeated crises in her balances of payments, in her export trade, which comes from private employers who have to compete abroad, and in her defense costs in other currencies.

Workers Now Indulge in "Gold Digging"

Compulsory state insurance for everything also has other aspects which have gradually come to disturb an increasing number of Britishers. Take a few examples. First, workmen's compensation. At the outset this was expected to be based on "the contributory principle." That is, it was expected that the blanketing of every workman in the nation by compulsory state insurance would supersede that workman's right at common law to proceed against his employers in the courts for compensation for injuries or incapacitation caused by something "during the normal course of his employment." Nothing of the kind has happened. He is covered by the state's insurance and continues to invoke the courts in his aid. Worse even than libel law, workmen's compensation cases have become what is known in Britain as "a gold-digging operation."

Or take another case: fringe benefits from employers. Many American employers, and most British ones, expected from the British welfare state that its all-comprehensive, compulsory insurances would supersede trades unions' demands for fringe benefits. But what happened? The official British Trade Unions Congress, the purely advisory confederation of all important trade unions, has asked all its member-unions to try out employers' reactions to an extra, additional system of sickpay benefits.

Another example: pensions. The first flat-rate retirement pension system of the state became increasingly hard to finance under inflation. So the Tory Government brought in a sharp, smart-seeming, overriding, second-tier system. From April of last year, 1961, employers were forced either (a) to switch their employees into a new graduated state pension system in which, for finance purposes, the higher-paid employees "subsidized" relatively higher pensions for the lower-paid employees, thus losing part of their own actuarial benefits, or else (b) to "contract them out" of the new state pension scheme by initiating a private supplementary pension scheme of their own with an insurance company, and after approval by the internal revenue.

To the surprise of the Government and the Ministry of Health and National Insurance officials, the number of employees contracted-out quickly rose to more than 20 per cent of total employees eligible for the state scheme, and is still slowly rising.

This result arose from two interesting phenomena, namely, (1) the quick dawning on employers that private insurance could offer better retirement bargains as pensions than the state's schemes; and (2) the equally quick realization by both employers and employed of this paradox: the better an employee the higher his pay, the higher therefore his "graduated" contribution, but the rate of graduated pension he eventually got would have a ceiling on it no matter what he earned during his working life, and no matter what he had paid into the state's coffers during that working lifetime.

The combination of (1) and (2) compelled both far-seeing employers and better-paid employees to prefer contracting-out of the new State pensions. Further, they led the private insurance companies to initiate all sorts of new and more attractive retirement pension schemes for private insurees, both corporate and individual, as for example, "dynamic pensions" rising with inflation after retirement, supplementary pension plans for employers on their better-paid employees' behalf, etc.

Britishers Seeking Private Services

But nothing has been quite as striking an implied criticism of the welfare state as the rapid rise in the number of Britishers — companies, other institutions and individuals—who, while paying their compulsory levies for welfare state benefits, decline to make use of some or all of its state services, even including state education. In addition to paying for others' benefits, they subscribe big sums out of taxed incomes in order once more to obtain private medical and hospital or other health services, or private education. Their total remains small as a percentage of the entire nation, the mass of which (as in all nations) remains ignorant, indigent or indolent in public affairs. But in the 14½ years since the Health Service alone has been in force, this minority has multiplied more than tenfold, its rise has accelerated in the past five years, and more and more private schemes and services are springing up. As for private education, there are longer waiting lists for private schools, and more such schools springing up, too.

Local Government "Dying on Its Feet"

Another important social, political and administrative side-effect of all this compulsory bureaucratized, centralized, and flatly standardized state welfare is its debilitating effect on local government, local patriotism, charity and personal voluntary services of all kinds. The cry is heard everywhere in Britain today that local government in the counties and municipalities is dying on its feet. Central government and its armies of officials have overriden what in America would be states' and cities' (and their citizens') rights. Indeed, the suggestion is seriously and now more frequently being made that Britain needs more of a federal; less—not more—of a centralized, system of government; more—not less—powers given to counties and municipalities. Similarly and for much the same reasons, the cry is heard that Britishers need a custodian of the custodians, an ombudsman (like Scandinavia) to safeguard the individual citizen's liber-

ties against Government and its officials, a tribunal of tribunals to which the citizen or aggrieved company or other body can bring its pleas—as the equity court arose in the Middle Ages alongside the king's courts of law—for justice and fair play in the welter of new state-agency bodies, tribunals, courts and bureaus. The complaints about poor state services in Britain range from the railways to hospitals; from the doctors and dentists (who fear for their profession's standards) to the universities; from businessmen and insurance companies (who, left to themselves, conclusively prove that they can offer insurees better bargains) to trade unions (who begin to see that they could drive better bargains across the board with their employers than their members get from the state).

In all this mix-up, Governments twist and turn. They try to extricate themselves from the toils in which the Socialists entangled them in those confused years immediately after the war, when the British version of the welfare state was faultily financed and the ensuing inflation thereby aggravated.

British Errors Hold a Lesson for U.S.

At the present time, therefore, thinking Britishers in many walks of public life look with great interest — and sympathy — on the current disputes in America about "extensions of social security." The Britishers' interest stems not from any American dispute *in principle*. It stems from the natural hope that Americans will not simply copy the British systems word for word and method for method. Why should Americans repeat the costly errors built in by the British a decade and a half ago, and now becoming painfully obvious even to British Socialists and trade unionists?

The British economy has had to be damped down by Government action in order to force Britons to export more. The Stock Exchange has had a slump like Wall Street. "Profitless prosperity" stares every British employer (and trade union bargainer) in the face. So anything that would lower the crushing weight of British taxes on companies and on every joint man-and-wife income over $4,500 would spell an increase in British competitiveness, an improvement in Britain's ability to finance defense expenditures overseas or loans to under-developed countries, and a lowering in unit-costs. Today much the same problems touch America. It seems an odd moment to talk of adding to costs, levies, taxes, and officials, all round.

Many Assumptions Now Proved to be False

Perhaps the most obvious error in the financing—or nonfinancing—of the British social security system since 1948 was the universal, all-party, unquestioning assumption that if the centralized state authorities provided comprehensive "cradle to grave" insurances of all kinds and administered them by officials, the citizens so insured would (a) get materially better benefits, (b) would continue to get them no matter what new benefits private enterprise insurers could offer them, (c) abandon claims for social security and other benefits against employers, (d) cease to demand new "fringe benefits," and (e) view the state's system as something outside party politics. Instead, the very reverse has occurred; each assumption has been proved false.

Thus, the state has seen the social security benefits become the sport of rival, outbidding politicians. To hold or win votes, the finances of the system have been enormously and uneconomically expanded, and inflation has been chosen as the least obvious, least painful way out.

Inflation in turn has made the voters suspicious of all politics and parties and brought Parliament into disesteem. It has also made insurance companies and the public more aware of what private enterprise can do better than the state can.

The present and future working population has been overloaded with taxes, levies and other fiscal burdens, in order to pay existing and immediately forthcoming pensioners, and can hardly throw the burdens off now.

The trade unions have begun to demand, under full employment, "all this and Heaven too"—all the state social security plus all the American employers' and employees' privately-agreed fringe benefits as well. Local governments, municipalities, and private insurance companies have seen workmen's compensation turned into gold-digging operations, while the courts have complained but can do nothing to remedy abuses.

The upshot in Britain has been that a thinking minority—including the leading newspapers and members of Parliament—now demands radical revision of the welfare state services, so that better-paid citizens should be permitted to do more for themselves, thus setting free more of the state's standardized flat-rate services for the small needy minority alone.

It is disturbing to at least one Britisher (the writer, who has lived and worked on both sides of the Atlantic) to see — in education, public health services, social security and a lot else—that just when one of our two nations becomes aware of its past errors in these fields, it goes kind of haywire and copies the earlier errors of the other. Each of us, British and Americans, in education and social security and much else, seem at this moment to be out to duplicate the earlier errors of the other country. We British are going all-out for technical, scientific education at all costs, particularly at the cost of the humanities, on the plea that you Americans have done so much better out of technical education. Just at the same moment you are going all-out

to develop the humanities at Massachusetts Institute of Technology and California Institute of Technology, etc.

Private Enterprise Appeals to British

So with the welfare state and social security, the law and practice of workmen's compensation, local government vs. centralized government, pensions, etc. Just when we British are getting worried out of our normal apathy by the awful financial, fiscal and administrative blunders we made a decade and a half ago, you Americans look like repeating some, if not all, of them.

On the other hand we British — employers, trade union leaders, insurance companies, local and municipal authorities—are laboring and lumbering along under a dead weight of flat-rate state imposed standards and handicaps. Your hitherto private-enterprise, private-bargaining, fringe-benefit, voluntary-associational systems seem most attractive to us, just when you look like tearing up a good deal of them to copy us.

I would conclude, out of my detailed knowledge of our British welfare state system during the past 15 years, with two warnings to my American friends in this field. First, remember the old German saying: *Gegen die Dummheit kämpfen die Götter selbst vergebens*—"Against stupidity the gods themselves fight in vain."

Secondly, don't build stupidities into a governmental and political system. Once built in they are harder and harder to unpick as time goes on, and the structure itself looks more and more like collapsing with them.

In a time of economic uncertainties and risks above all, a country needs to heed such warnings. The foundations of democracy and the four freedoms lie in personal initiative, responsibilities, and enterprise; in the voluntary, not the compulsory, principle.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

MEDICAL SCHOOL DEAN NAMED

Trustees of Loma Linda University have named David B. Hinshaw, M. D., to be Dean of the University's School of Medicine. Dr. Hinshaw, 38, succeeds Walter E. Macpherson, M. D., who was made Vice President for Medical Affairs at the University, according to an announcement recently from President Godfrey T. Anderson.

Dr. Hinshaw has been on the faculty of the school since 1954, becoming professor of surgery in 1961. He is also chief of the University's surgery service at Los Angeles County hospital.

A graduate of the Loma Linda University School of Medicine in 1947, the new dean spent two years as an army medical officer before beginning five years of residency and specialty training leading to certification by the American Board of Surgery in 1955. He is the author of many scientific research articles and papers, particularly in the areas of his special interest—problems of peptic ulcer disease, gastric surgery, and tissue homotransplantation. This research has been supported by substantial grants from the U. S. Public Health Service.

Among the professional organizations of which Dr. Hinshaw is a member are the American College of Surgeons, the Pacific Coast Surgical Association, the Society of University Surgeons, and the Los Angeles County, California, and American Medical Associations. With his wife and their three children, he lives at 325 W. Walnut Ave., Arcadia.

COURSE ON ATHEROSCLEROSIS AND HYPERTENSION NEW YORK UNIVERSITY MEDICAL CENTER

A three-day full-time course on Atherosclerosis and Hypertension will be offered by the New York University Medical Center from November 8-10 under the chairmanship of Dr. Roy H. Clauss, associate professor of surgery, and Dr. Jere W. Lord, Jr., professor of clinical surgery.

The symposium is designed for physicians and surgeons interested in diseases of the vascular system and will emphasize a current analysis of atherosclerosis and hypertension. Aspects of causes, prevention, and the spectrum of therapy will be debated and surgical and medical consideration of patients with diseases of extracranial cerebral arteries, renal and peripheral arteries, portal hypertension, and neurovascular syndromes will be evaluated.

The distinguished guest faculty includes: Drs. Edward H. Ahrens, Jr., Rockefeller Institute; Tage Astrup, Washington Clinic, Washington, D. C.; Wiley F. Barker, University of California; Arthur H. Blakemore, Presbyterian Hospital, New York City; Hugh R. Butt, Mayo Foundation; Thomas C. Chalmers, Tufts University; Charles G. Child, III, University of Michigan; Robert R. Linton, Harvard Medical School; Clark H. Millikan, Mayo Foundation; Irvine H. Page, Cleveland Clinic, Cleveland, O.; Oscar W. Portman, Harvard School of Public Health; Charles G. Rob, University of Rochester; Jeremiah Stamler, Chicago Board of Health; D. Emerick Szilagyi, Henry Ford Hospital, Detroit, Mich.; Chester C. Winter, Ohio State University; Nathan A. Womack, University of North Carolina; and Irving S. Wright, Cornell University.

Tuition for the course is $75. For further information and application, write to: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, N. Y.

CHEST PHYSICIANS TO HOLD INTERIM SESSION IN LOS ANGELES

The American College of Chest Physicians will hold its annual Interim Session at the Ambassador Hotel in Los Angeles November 24-25, 1962. This is just prior to the American Medical Association Clinical Meeting there.

Full day scientific sessions will be held on Saturday and Sunday, the 24th and 25th. Administrative sessions will be held Monday, the 26th.

Dr. Alfred Goldman, Beverly Hills, chairman of the Program Committee has arranged a scientific program of exceptional interest. There will be panels and Round Table Luncheon discussions (three on Saturday and three on Sunday) in addition to formal papers.

The Fireside Conferences, always a popular feature, will be on Saturday evening and will consist of sixteen round table discussion groups with prominent scientists leading informal discussions on various aspects in the diagnosis and treatment of cardiovascular and bronchopulmonary disease.

Subjects will include clinical virology, atypical pneumonias, prevention and management of influenza and the common cold, pulmonary tuberculosis, diagnosis and treatment of coronary heart disease, impending myocardial infarction, and surgical treatment of congenital cardiac anomalies.

Other items of interest are rehabilitation of the cardiac patient, IPPB, spontaneous pneumothorax, recent advances in cardiac catheterization, methods of dealing with cardiac arrest in open heart surgery, and lung cancer.

A program may be obtained by writing Mr. Murray Kornfeld, Executive Director of the College, at 112 East Chestnut Street, Chicago 11, Illinois.

SOUTHERN MEDICAL ASSOCIATION

The section of Ophthalmology of the Southern Medical Association announces that Dr. Arthur Gerard DeVoe of New York City will be the Guest Speaker at their Annual Meeting at the Fontainebleau Hotel, Miami Beach Florida the week following the Academy meeting November 12-15, 1962.

Television programs this year will be on Diseases of the Cornea and Surgical treatment of Diseases of the Cornea with Dr. Edward W. D. Norton of Miami as co-ordinator and with panels of prominent Ophthalmologists on television.

The general Ophthalmology program covers subjects dealing with cataract surgery and its complications, ocular muscles, retinal detachments, I.U.D. in Herpes Simplex, retinoblastoma and contact lens.

Otolaryngology sessions will deal with stapedectomy, mastoid sinus and salivary gland calcus, Cobalt radiation and fractures of the area, congenital deafness, and maxillary resection.

For further information please contact the Secretary, Dr. Albert C. Esposito, Suite 1212, First Huntington National Bank Building, Huntington, West Virginia.

NEW PLAN IN STUDENT ADMISSIONS AT TULANE

For the first time Tulane is admitting students this fall who have completed two years of college work. To be considered under the new requirement, applicants must have exceptionally good qualifications and plan their course selection in college with advice from their college faculties and the Tulane admissions committee. While only one student has been select-

ed for this fall under the new plan, it is expected that there will be more in future years. At the same time, the plan will be kept under continual evaluation, according to Dr. Harold Cummins, assistant dean and chairman of the admissions committee.

OFFICERS ELECTED BY AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS

Harold D. Palmer, M. D., Presbyterian Hospital, Denver, Colorado, was installed recently as president of the American Society of Clinical Pathologists, succeeding Richard E. Palmer, M. D., Alexandria Hospital, Alexandria, Virginia.

Robert W. Coon, M. D., University of Vermont, Burlington, was named president-elect to take office at the annual meeting next September, to be held again in Chicago.

William O. Russell, M. D., of the M. D. Anderson Memorial Hospital, Houston, Texas, was elected vice-president.

Elected to the Board of Directors were: Edward A. Gall, M. D., University of Cincinnati, Cincinnati, Ohio, and Rosser L. Mainwaring, M. D., Oakwood Hospital, Dearborn, Michigan.

TWENTIETH VOLUME OF HISTORY OF THE ARMY MEDICAL DEPARTMENT IN WORLD WAR II NOW AVAILABLE

The twentieth volume of a proposed 45 volume history of the Army Medical Department in World War II was published this month by the U. S. government printing office.

The latest volume to appear is one of ten that have been prepared at Tulane University school of medicine under a contract with the Army Surgeon General's Office.

Miss Elizabeth M. McFetridge, medical editor associated with Tulane medical school is serving as associate editor of the volumes of the series dealing with surgery. She has been closely involved with the writing and editorial work of the volumes on surgery.

The latest volume to appear is the first of two volumes on the activities of surgical consultants in World War II and presents methods used by surgical consultants which contributed to the low case fatality rate in battle casualties. The volume describes the work of the surgical consultants in the Office of the Surgeon General, the extension of the system to the service commands in the U. S., and its operation in the field armies overseas.

The volume points out that the surgical consultants were concerned mainly with the maintenance of high standards of surgical practice. It was their responsibility to evaluate, promote and improve the quality of medical care by teaching, conducting ward rounds and establishing journal clubs.

The volumes that have so far been published are available from the Superintendent of documents of the U. S. Government printing office. They are also available for circulation in the 86 medical school libraries.

PRESCRIPTION DRUG INDUSTRY ACTS TO EXPAND LIMITS OF SCIENTIFIC KNOWLEDGE

The prescription drug industry acted swiftly recently to expand the limits of scientific knowledge to further protect American mothers against any possibility of drug-connected infant malformations.

The European drug, thalidomide, which has been widely used abroad, is reported to have caused such malformations. The drug has been clinically tested but not sold in the United States.

Austin Smith, M. D., president of the Pharmaceutical Manufacturers Association, said the association's board of directors has authorized establishment and financing of a Commission on Drug Safety "to investigate an unpredictable problem which is assumed to be connected with use of the European drug."

Dr. Smith said the commission, whose membership will be announced shortly, will be authorized to develop research projects even more intensive than past or present efforts to find test methods to prevent unforseen toxic effects of drugs.

He said the commission will be comprised, for the most part, of individuals from leading scientific and medical societies, medical colleges, government agencies and independent laboratories. They will include specialists in medicine, toxicology, physiology, genetics and other disciplines, Smith declared.

He pointed out that under federal law the Food and Drug Administration is responsible for determining that a new medicine is safe before it goes on the market.

FINGERPRINTS MAY OFFER CLUE TO MENTAL ILLNESS

Patients suffering schizophrenia were found to have a high incidence of unusual fingerprints in a study reported in the April 21 Journal of the American Medical Association.

These findings support the theory that a genetic, or inherited, deficiency, results in a vulnerability to a variety of disorders and abnormalities, according to Theophile Raphael, M. D., and Louise G. Raphael, A.B., Ann Arbor, Mich., authors of the report.

Fingerprints develop during the third and fourth months of pregnancy, the authors said, and abnormal prints have been linked to such congenital conditions as epilepsy and mongolism.

The two researchers said they compared the fingerprints of 100 male patients aged 12 to 67

at Ypsilanti State Hospital, Ypsilanti, Mich., classified according to the Federal Bureau of Investigation system, with Scotland Yard fingerprints, the largest, most complete and reliable series for the general population.

The comparison revealed that among patients there was an increased incidence of whorls, lines that make almost complete circles, and arches, lines that rise to a peak, particularly the sharper peaks, they said. At the same time, the patients had fewer ulnar loops, i.e., lines forming ovals, than the normal population group, they said.

A striking difference, the authors said, was the high incidence of short, broken lines in the center of whorls among the patients which contrasted with the orderly concentric circles among the normal population. This "ridge dissociation" found frequently among the patients apparently is rare in the general population, they said.

These findings raise the possibility of detecting vulnerability to various abnormalities and disorders, they said, and warrant more intensive investigation.

BOARD PREPARATORY COURSE IN OBSTETRICS AND GYNECOLOGY

Obstetrical and gynecological pathology, endocrinology and radiotherapy, December 13, 14 and 15, 1962. Registration fee, $100.00. Write Department of Obstetrics and Gynecology, Baylor University College of Medicine, 1200 M. D. Anderson Blvd., Houston 25, Texas.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled Part I (written) examination of this Board will be held at various examining centers in the United States, Canada; also military centers outside the continental United States, on Friday, December 14, 1962.

Current Bulletins may be obtained by writing to: Robert L. Faulkner, M. D., Executive Secretary and Treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

Diplomates of this Board are urged to notify the office of the Executive Secretary and Treasurer of a change in address.

BOOK REVIEWS

Carcinoma of the Cervix; by John B. Graham, L. S. J. Sotto, F. P. Paloucek, Saunders Company, 1962, Philadelphia and London. 487 p. $14.00.

This monograph is of value to both the gynecology resident and to the practicing gynecologist, as it covers the important aspects of its subject in a fairly representative fashion.

The book contains twenty-eight chapters (487 pages), seven of which are devoted to radiologic treatment and complications, and three of which are concerned with surgical treatment and complications. Several more chapters contain additional information on these subjects.

There are separate chapters dealing with special problems such as pregnancy, cancer in the cervical stump, cancer in the prolapsed uterus, persistent and recurrent cancer, and carcinoma in situ.

Five chapters discuss prognosis, including an entire chapter on clinical staging. Lymph node metastases and the significance thereof is discussed.

The remaining chapters deal with etiology, diagnosis, pathology, and incidence.

Complications of therapy are particularly well presented and emphasized; separate chapters being devoted to the consequences of radiotherapy, extensive hysterectomy, and pelvic exenteration.

Information on surgical technique is limited to a single method used at Buffalo. Much less space is devoted to surgery than would be expected in a book of this purported scope.

The detailed information on radiotherapy is of interest and value to the gynecologist, as this is usually not covered well in texts on this subject.

Cancer detection and diagnostic methods are properly emphasized. The pathology section, including cytodiagnosis, is adequate.

This is a very readable and well balanced text, reflecting an advantage of having a limited number of authors. For those seeking more thorough surgical coverage of this disease, however, earlier texts on the subject are recommended.

James H. Venable, M. D.

Immunity; 2nd Ed., Sidney Raffel. Appleton-Century-Crofts, New York, 1961. X + 646 pp. Illus. $10.

In this new edition of a widely accepted book, the original format of presentation has been retained as has the fundamentally biological approach. The study of immunity is presented as the study of host-parasite interactions; the leading chapters being devoted to basic mechanisms of pathogenicity and resistance with these mechanisms being delineated and analyzed in numerous infectious diseases in later chapters.

The revision of the first edition has been considerable with a net increase in content of almost fifty percent.

Although only one new chapter has been added, a discussion of immunologic disease, almost every chapter has been modified or extended. The number of references is at least doubled and in some chapters is almost five-fold that of the first edition. New sections on properdin, immunological tolerance, relationship of drug resistance and virulence, nucleoproteins as antigens, effect of ionizing irradiation and chemicals on immunity, and several new sections on delayed hypersensitivity, to list a few, all attest to the increased coverage. Some subjects (the determination of hapten-antibody dissociation constants and the comparative virulence of *in vivo* and *in vitro* grown bacteria come readily to mind) have been omitted while others, such as the role of mucin in host resistance and the quantitative aspects of antigen-antibody interactions, could possibly have received more attention. This latter can hardly be termed a criticism, however, as to include the field of immunochemistry would lengthen the book intolerably as well as destroy its very enjoyable approach.

Certain errors and inconsistencies do appear but they are rare and probably are unavoidable in a book of this size. For example, in the discussion of lysozyme the phrase "Gram staining property" has been omitted thus changing the meaning of the sentence. Also, although neuraminidase is adequately covered in the chapter on influenza, these more recent references are ignored in an earlier section on the virulence of viruses and the enzyme substrate is incorrectly given.

In general, the book is a timely revisal of an excellent text and should find even wider acceptance than its predecessor. The manner in which many difficult and disjointed facts are presented so as to leave the reader with a balanced understanding of immunity is particularly to be recommended.

C. W. DeWitt, Ph.D.

Myxedema; by Jerry K. Aikawa, C. C. Thomas, 1961, 106 p. $5.00.

Dr. Aikawa has written an interesting and selected review about thyroid myxedema. The references he has chosen are good and the facts are written clearly and interestingly. The clinical discussions are few.

The first third of the book concerns the history of the clinical diagnosis and treatment of myxedema. In each of the subsequent chapters Dr. Aikawa has developed his material by giving the historical development of each subject such as the BMR, Serum PBI or I^{131} uptake of the thyroid gland and a few brief critical remarks on these from recent references that would be of interest to the student-physician. The most valuable part of the book is how the author has been able to use a few lucid words describing selected references on specific physiological, pathological or biochemical observations which have been made on myxedema. This stimulates one to want to read these references.

C. Y. Bowers, M. D.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

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WOLFF—ELECTROCARDIOGRAPHY

Help in understanding and evaluating electrocardiograms in terms of clinical medicine—without relying on memorization of examples.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Doubleday & Co., Inc., N. Y.: Doctors, Patients, and Health Insurance, by Herman Miles Somers and Anne Ramsay Somers.

The Gossip Printery, Inc., Holton, Kansas: Disinfected Mail, by K. F. Meyer, M. D.

Grune & Stratton, Inc., N. Y.: Body Fluid Disturbances (New Printing), edited by W. D. Snively, Jr., M. D.

Office of the Surgeon General, Department of the Army, Washington, D. C.: Wound Ballistics, by Lt. Col. James C. Beyer, MC, USA; Activities of Surgical Consultants (Vol. I), by B. Noland Carter, M. D.

W. B. Saunders Co., Phila.: 1961-1962 Collected Papers in Medicine from the Mayo Clinic and the Mayo Foundation (Vol. 53); Handbook of Psychiatric Treatment in Medical Practice, by Nathan S. Kline, M. D. and Heinz Lehmann. M. D.; Peripheral Vascular Diseases, by Edgar V. Allen, M. D., Nelson W. Barker, M. D., and Edgar A. Hines, Jr., M. D.; Electrocardiography, by Louis Wolff, M. D.; Surgery of the Chest, edited by John H. Gibbon, Jr., M. D.; Novak's Gynecologic and Obstetric Pathology, by Edmund R. Novak, M. D. and J. Donald Woodruff, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Dermatoses Due to Environmental and Physical Factors, by Rees B. Rees, M. D.



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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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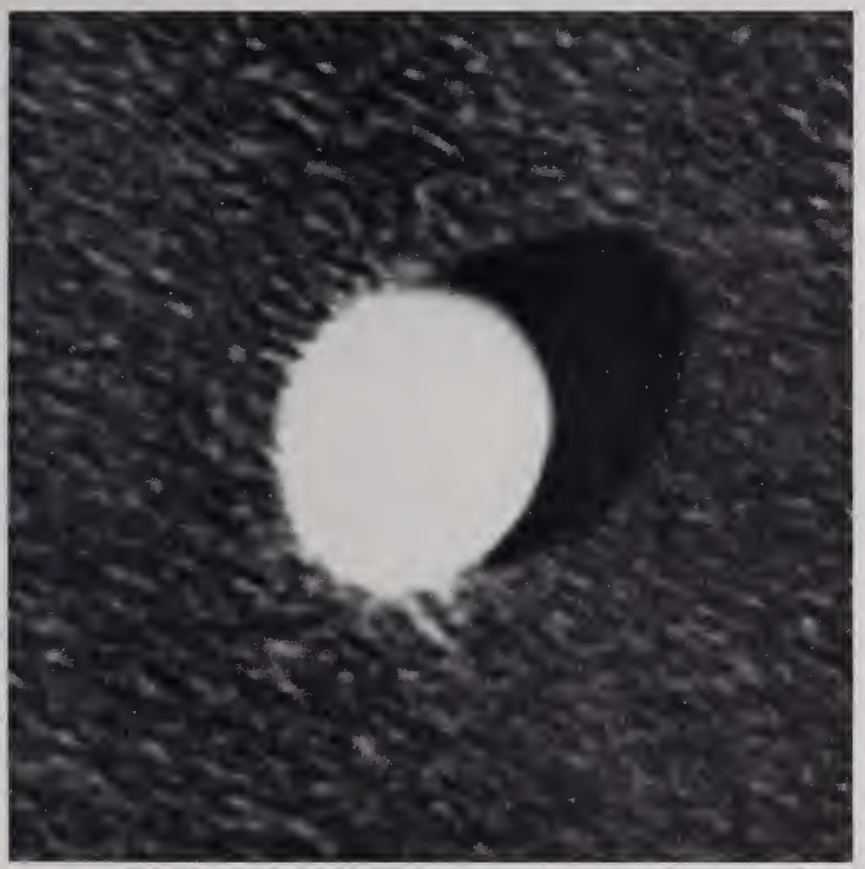
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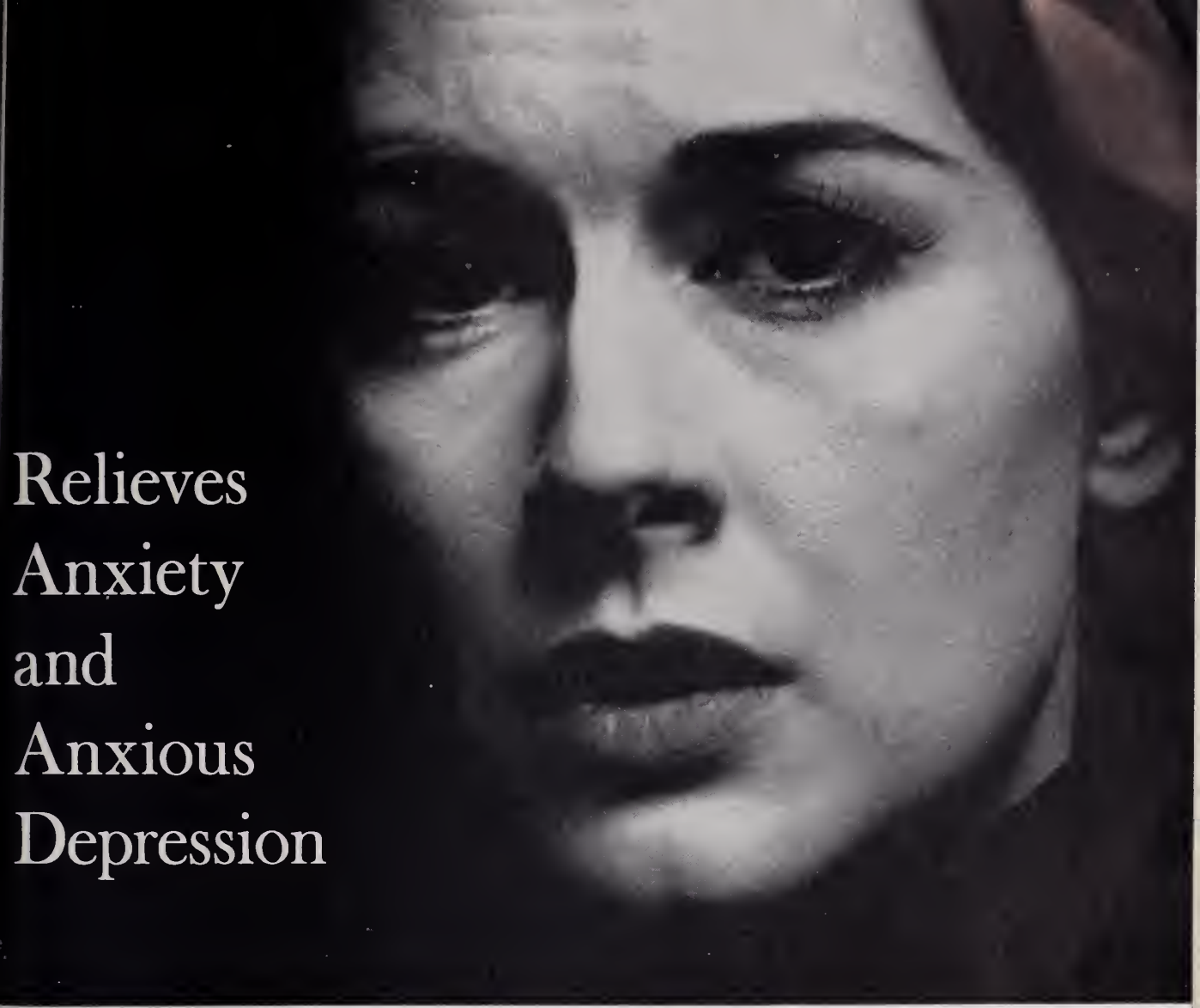
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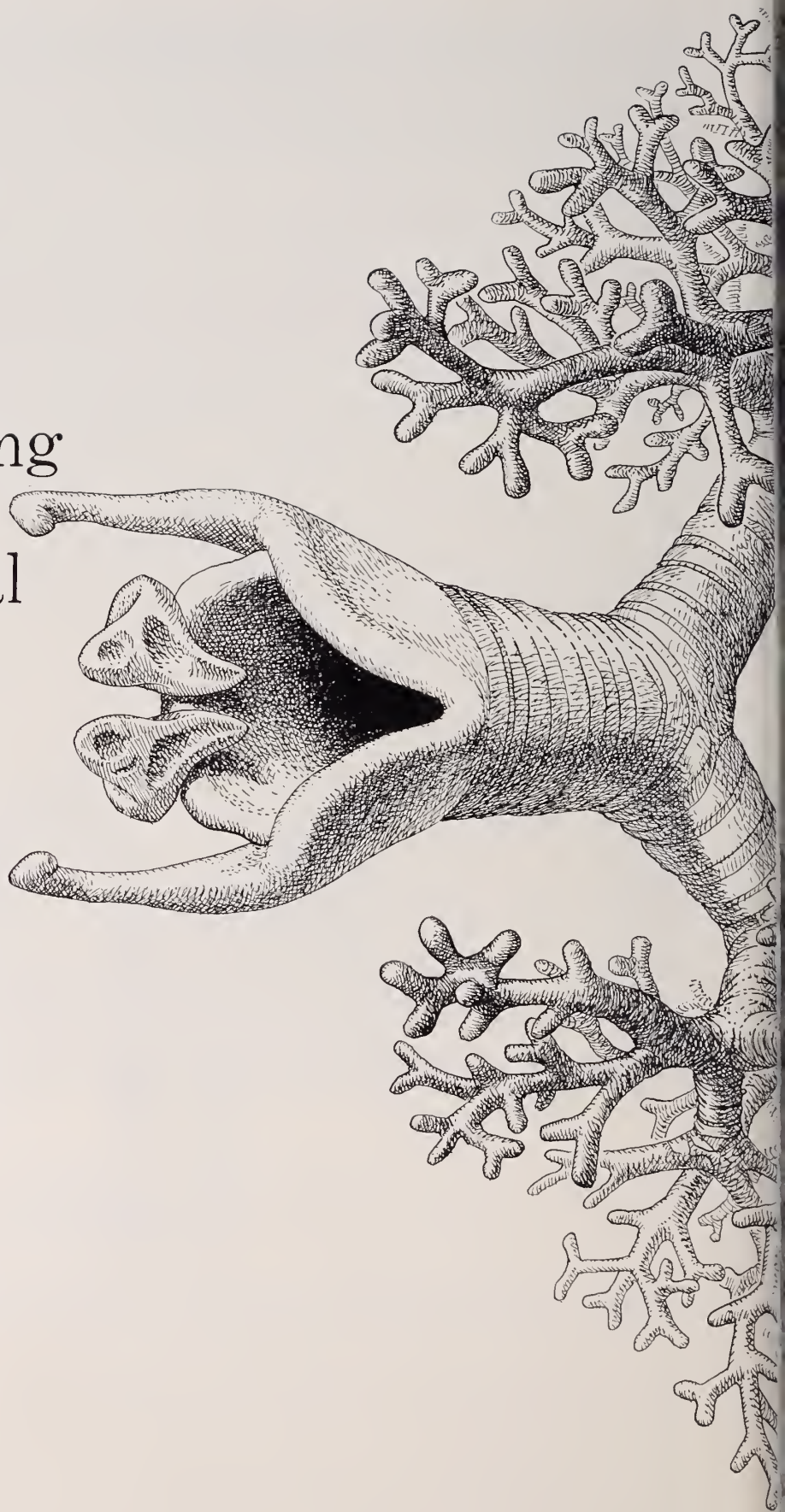
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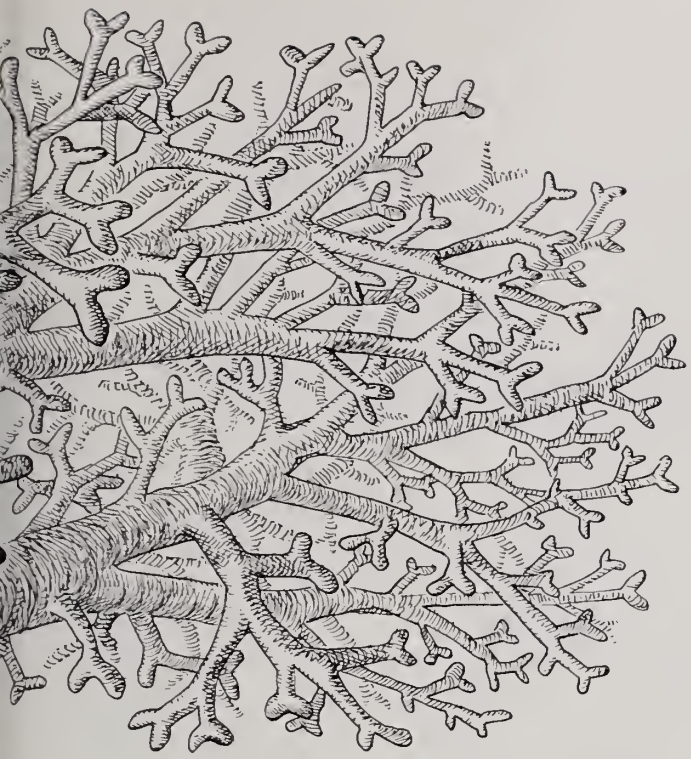
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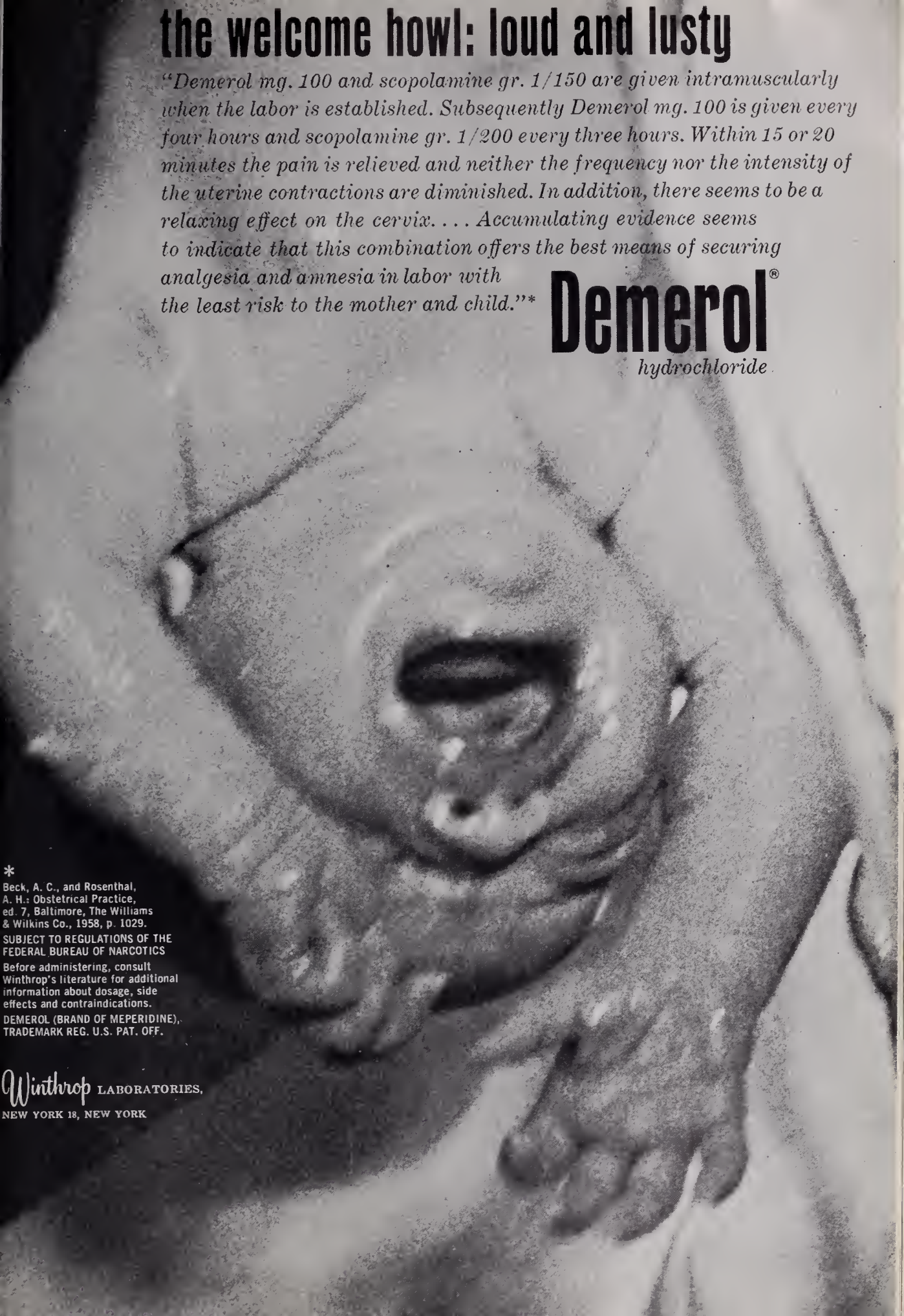
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Beck, A. C., and Rosenthal, A. H.: Obstetrical Practice, ed. 7, Baltimore, The Williams & Wilkins Co., 1958, p. 1029.

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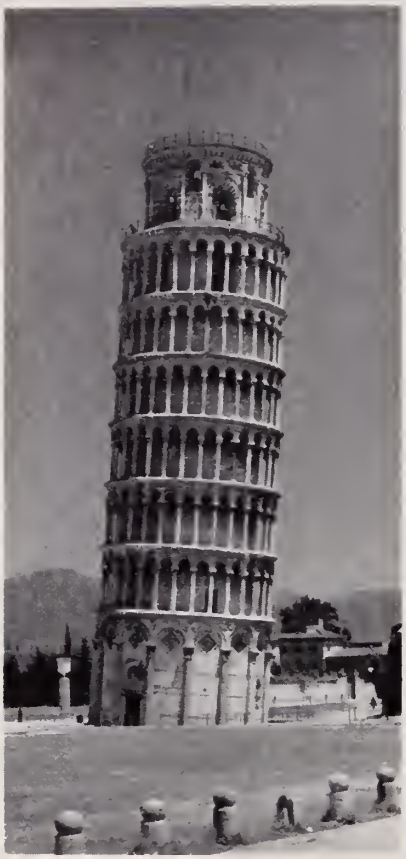
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1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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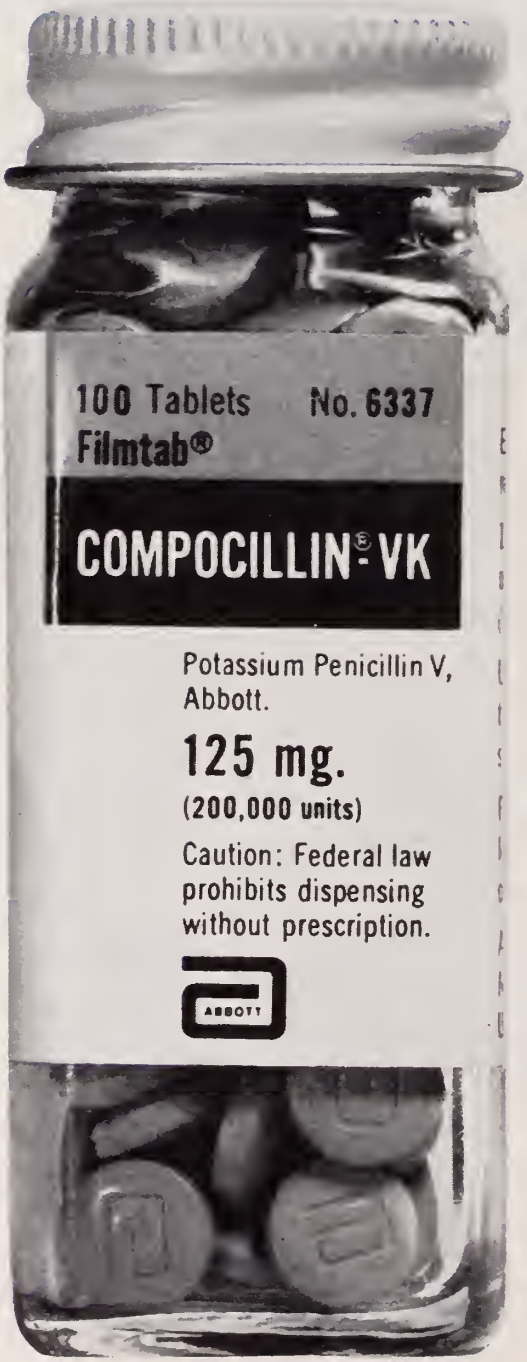
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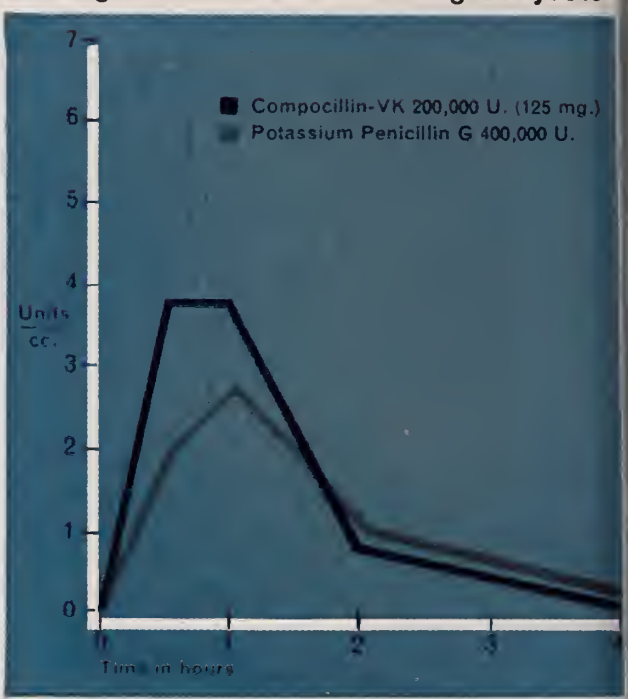
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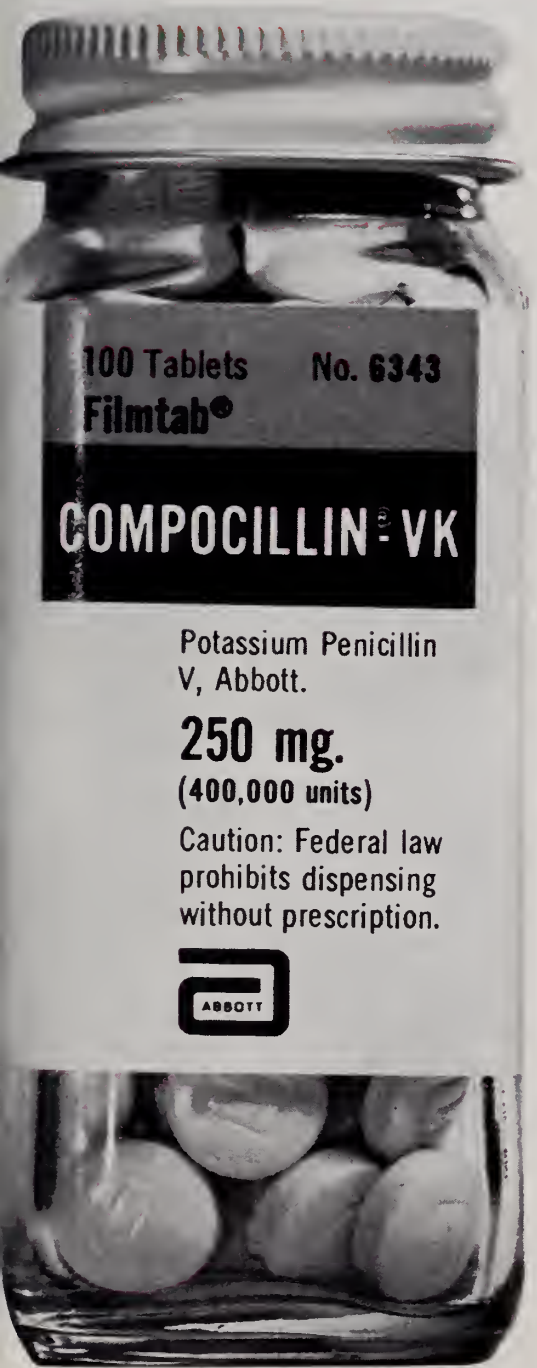
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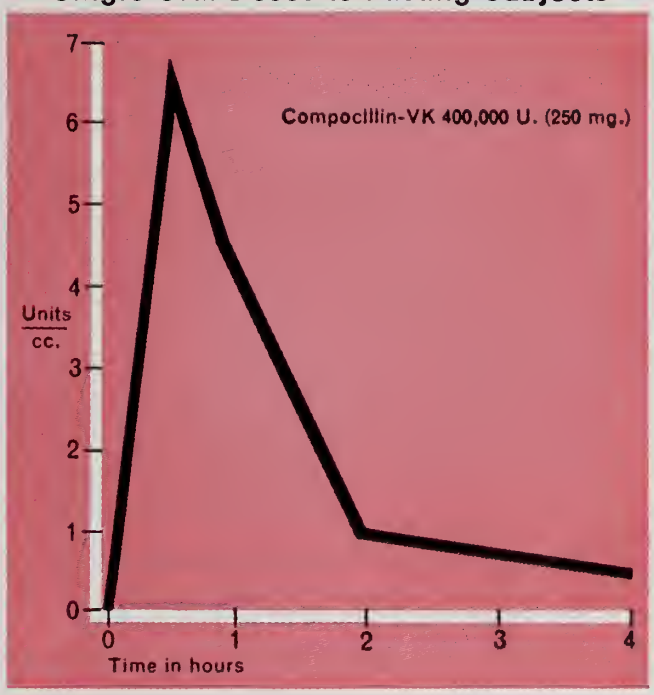
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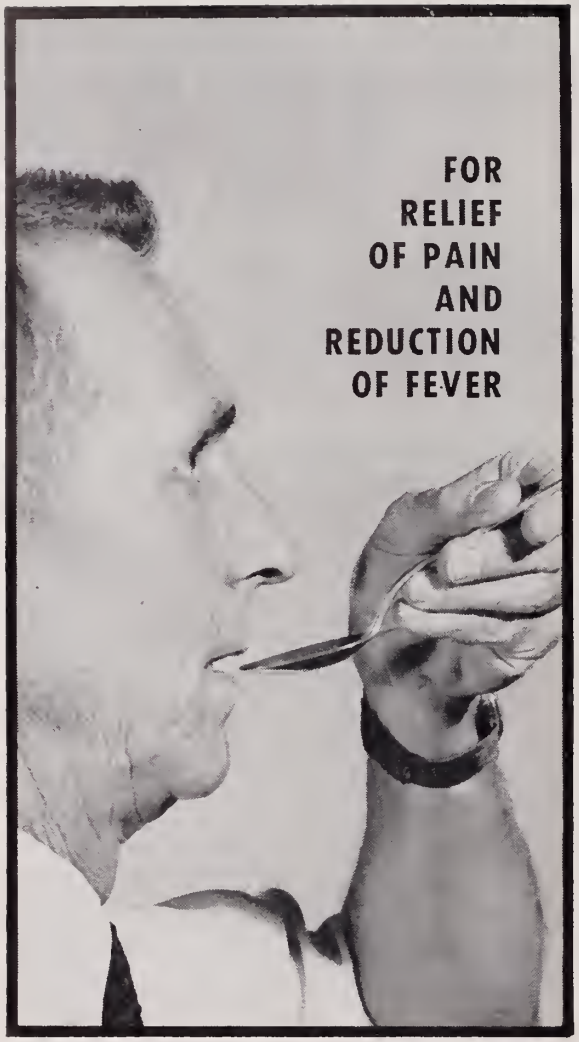
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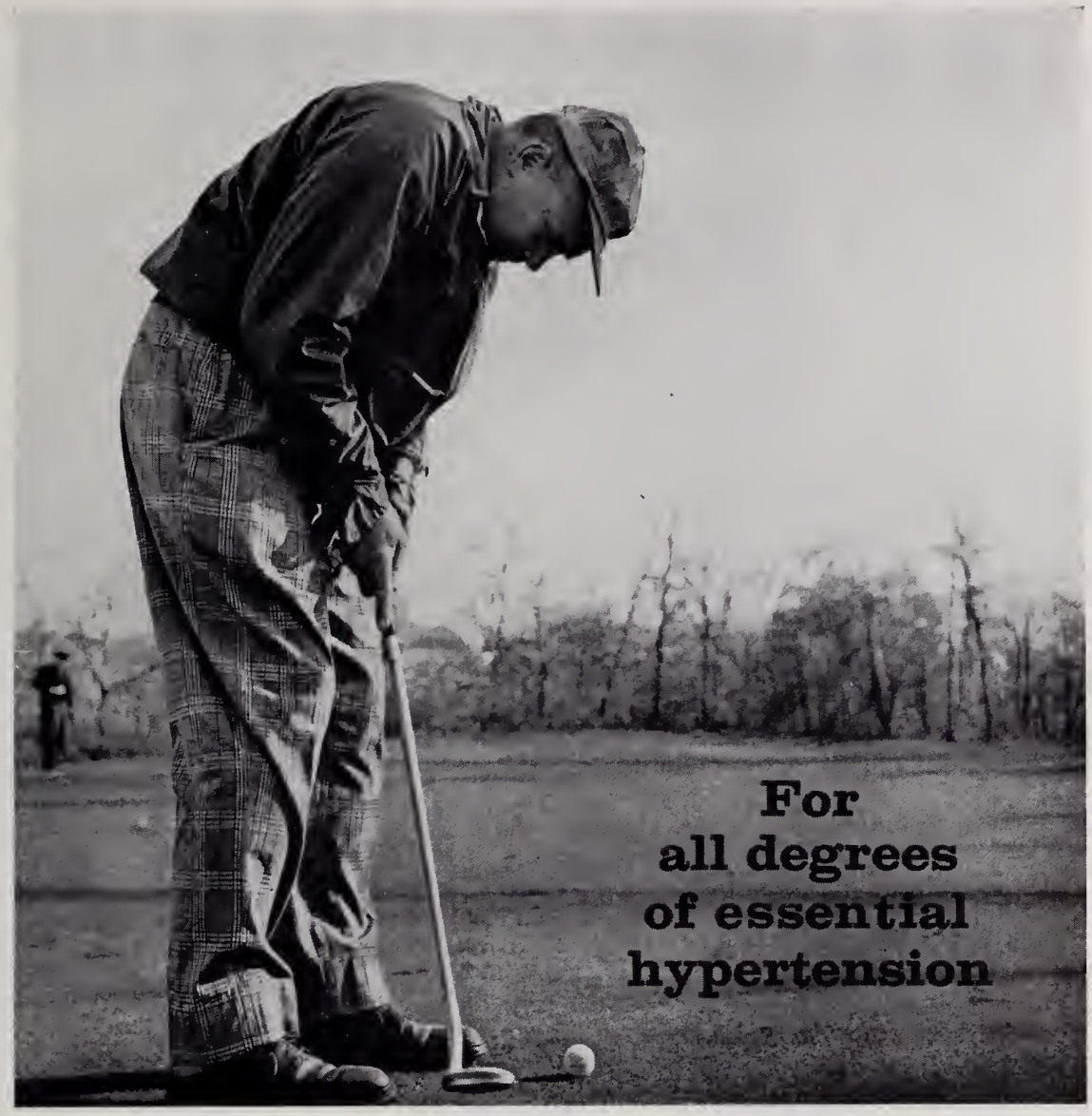
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2. Spoor, H. J.: N. Y. State J. M. 58:3292, 1958.
3. Lubowe, I. I.: Western Med. 1:45, 1960.
4. Weissberg, G.: Clin. Med. 7:1161, 1960.



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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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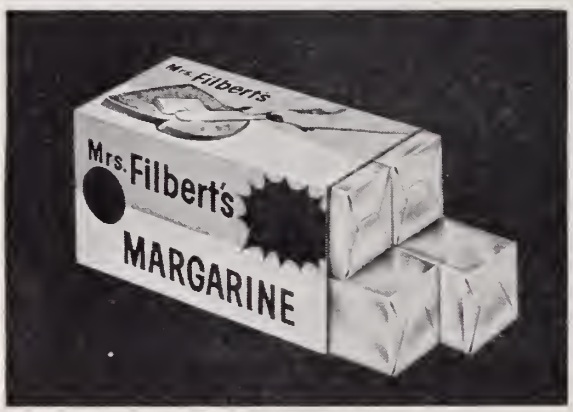
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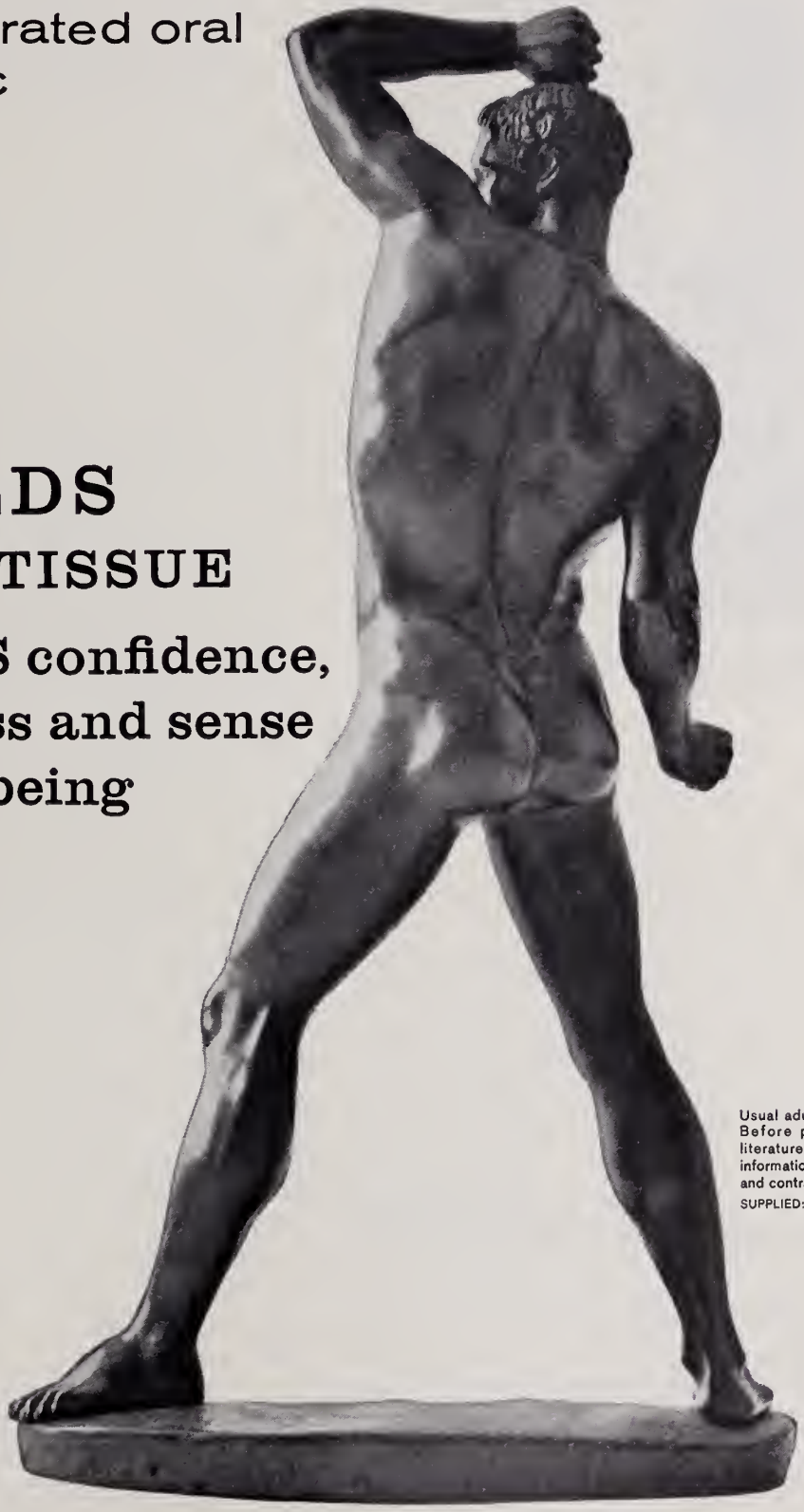
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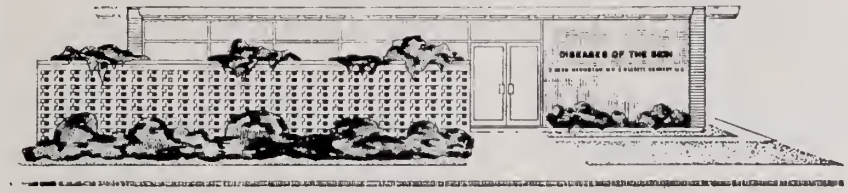
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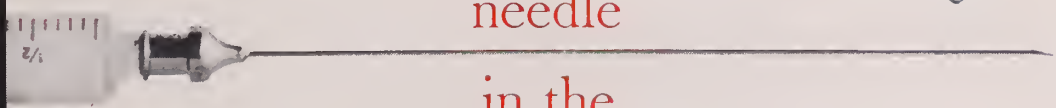
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At the request of the Louisiana Academy of Pediatrics we call your attention to the problem of chronic lead poisoning in children. Many large cities have discovered during the past decade that increasing numbers of lead poisoning cases are appearing in areas where previously none had appeared. Increases in some areas could be due to increased awareness of the disease and improved community facilities for detecting it. However, studies reported in *Home Safety Review* (Oct. 1957) conclude that "the high incidence of unsuspected cases found among 12-to 35-month-old housemates of the index cases demonstrate the importance of the environmental aspect of the problem in economically urban depressed areas. This high incidence of 'secondary cases' emphasizes the physician's obligation to examine carefully and promptly all environmental contacts under 3 years of age wherever an index case is found."

Although lead poisoning may produce a variety of signs and symptoms, the following are most significant in making a diagnosis:

1. Awareness that pica may be associated with lead poisoning.

2. Presence of symptoms such as lack of appetite, listlessness, increased irritability, vague abdominal pain or cramps, constipation, or vomiting might suggest lead poisoning.

3. Convulsions or unexplained unconsciousness should raise the question of lead poisoning.

4. Laboratory tests are indicated when suspicion is present. These tests are for the presence of an iron deficiency anemia, abnormal blue spots or "stippling" in the red blood cells, abnormal density of the ends of the bones as seen by x-ray; and for conclusive evidence, special tests for abnormal concentration of lead in blood and urine.

Louisiana State Board of Health

W. J. REIN, M.D.,

President



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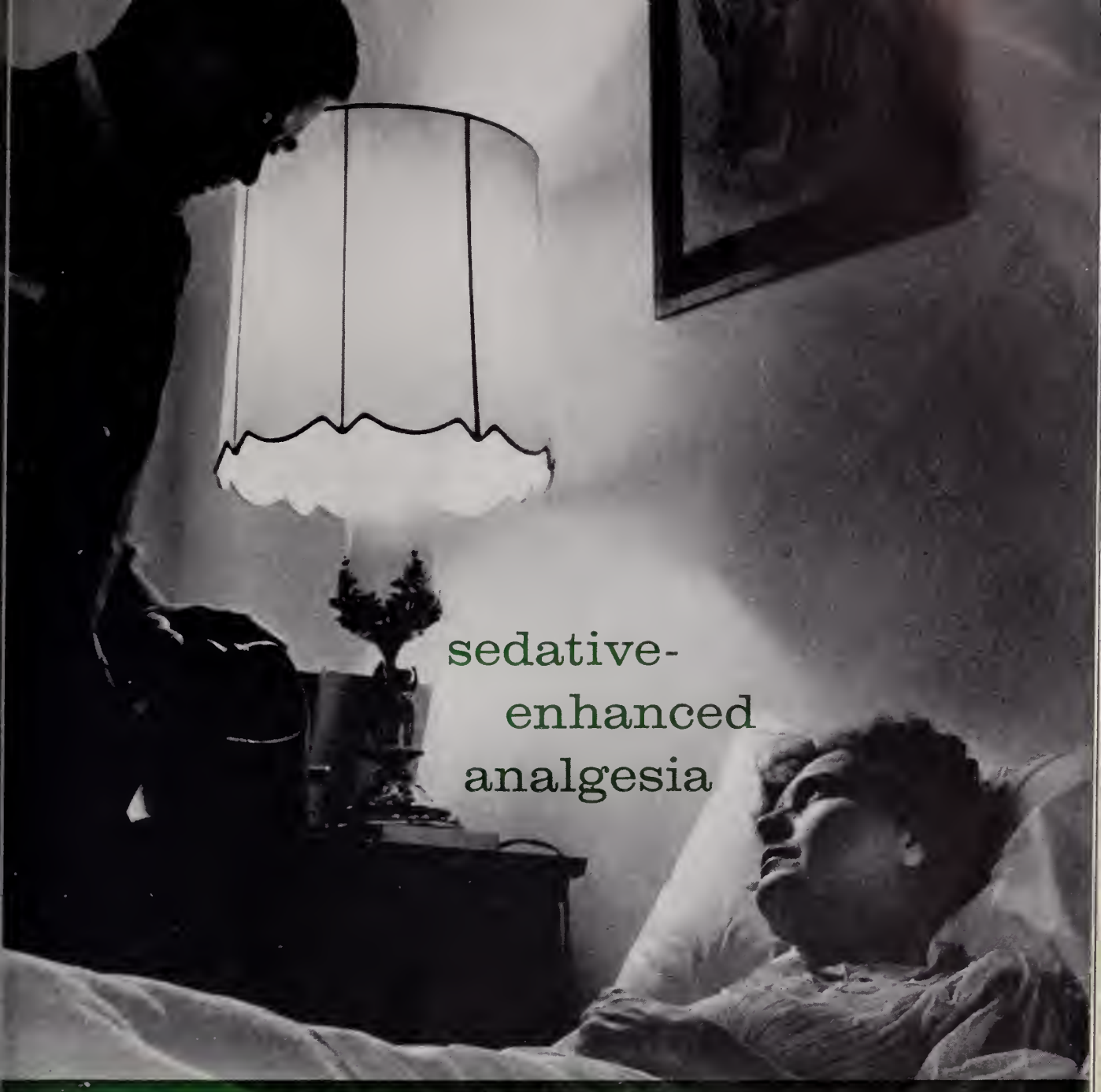
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1. Meyers, G. B.: Ind. Med. & Surg. 26:3, 1957. 2. Murray, R. J.: N. Y. St. J. Med. 53:1867, 1953.

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REFERENCES: (1) Roseman, E.: Neurology **11**:*912, 1961. (2) Bray, P. F.:* Pediatrics **23**:*151, 1959. (3) Chao, D. H.; Druckman, R., & Kellaway, P.: Convulsive Disorders of Children, Philadelphia, W. B. Saunders Company, 1958, p. 120. (4) Crawley, J. W.:* M. Clin. North America **12**:*317, 1958. (5) Livingston, S.: The Diagnosis and Treatment of Convulsive Disorders in Children, Springfield, Ill., Charles C Thomas, 1954, p. 190. (6) Ibid.:* Postgrad. Med. **20**:*584, 1956. (7) Merritt, H. H.:* Brit. M. J. **1**:*666, 1958. (8) Carter, C. H.:* Arch. Neurol. & Psychiat. **79**:*136, 1958. (9) Thomas, M. H., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, The Williams & Wilkins Company, 1956, p. 37. (10) Goodman, L. S., & Gilman, A.: The Pharmacological Basis of Therapeutics, ed. 2, New York, The Macmillan Company, 1956, p. 187.*

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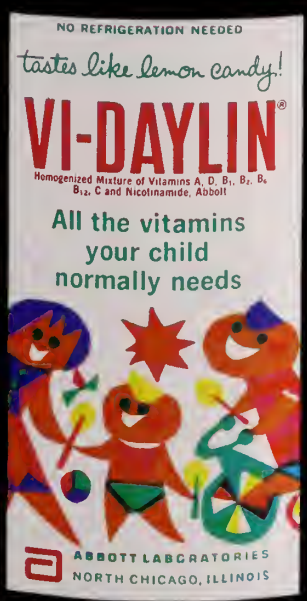
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The Disneyland Hotel

KNOXVILLE, TENNESSEE
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Hotel Andrew Johnson

PHOENIX, ARIZONA
November 18, 1962
Westward Ho Hotel

NEW CITY, NEW YORK
Wednesday, November 28, 1962
Dellwood Country Club

LOS ANGELES, CALIFORNIA
November 29, 1962
Ambassador Hotel

GRAND RAPIDS, MICHIGAN
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December 6, 1962
Golden Triangle Motor Hotel

DENVER, COLORADO
Sunday, January 13, 1963
The Cosmopolitan Hotel

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Tuesday, January 15, 1963
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Thursday, March 14, 1963
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CAUTIONS: Should be used with caution in patients hypersensitive to sympathomimetic compounds; in cases of coronary or cardiovascular disease; and in the presence of severe hypertension.

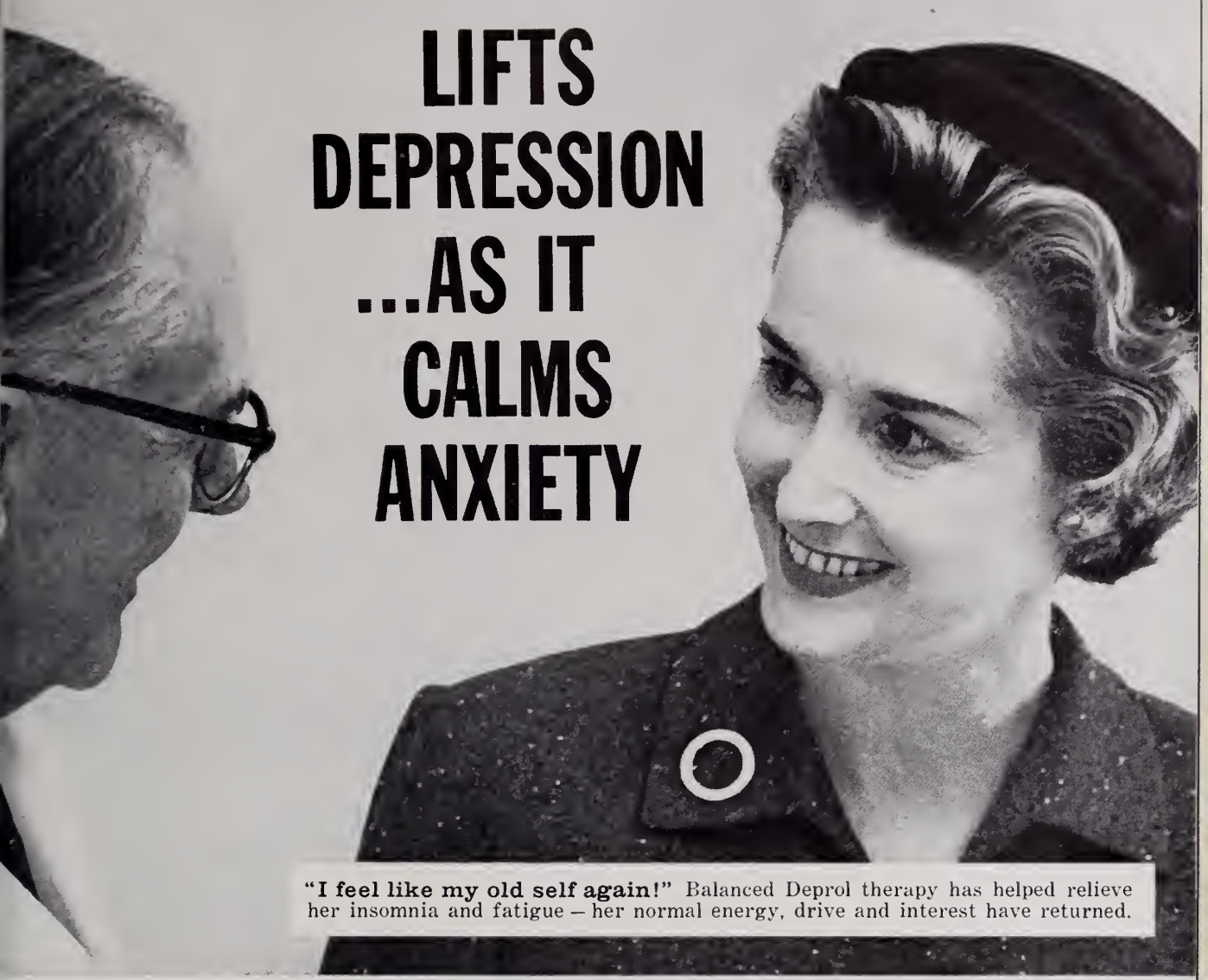
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SUPPLIED: 5 mg., 10 mg. and 15 mg., in bottles of 30. (Each capsule contains dextro amphetamine sulfate, 5 mg., 10 mg., or 15 mg.)

Prescribing information adopted January 1961.

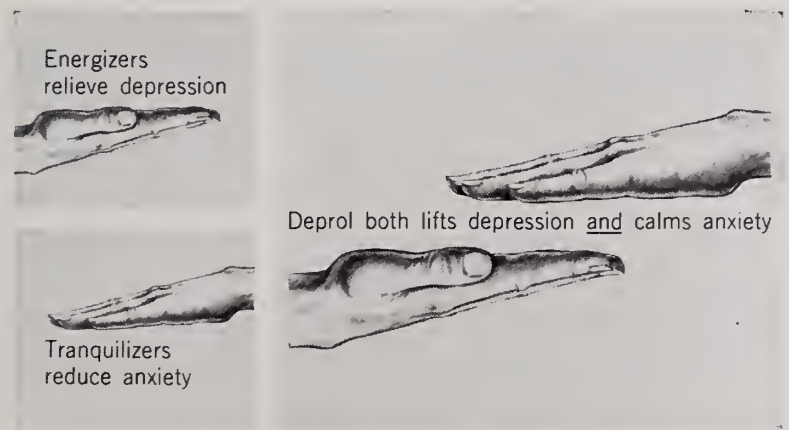
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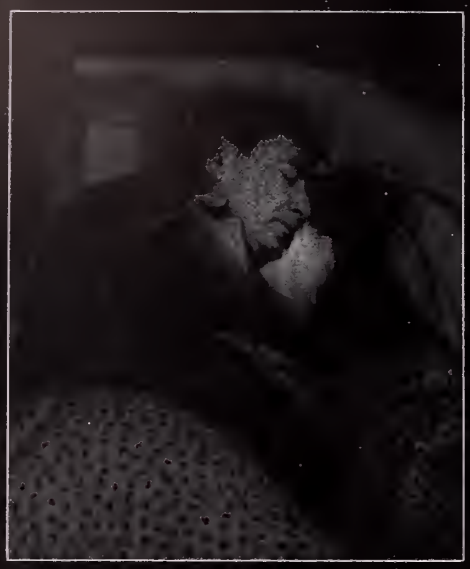
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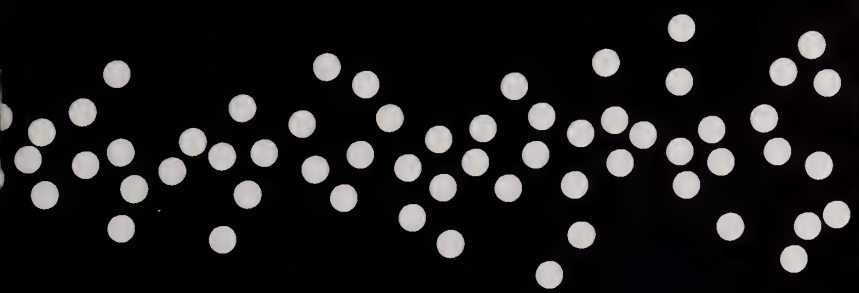
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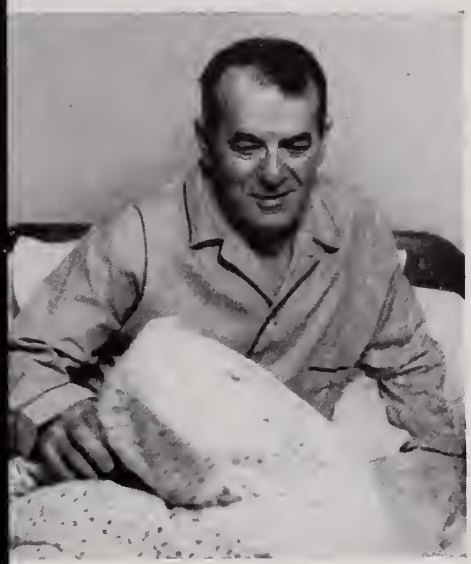
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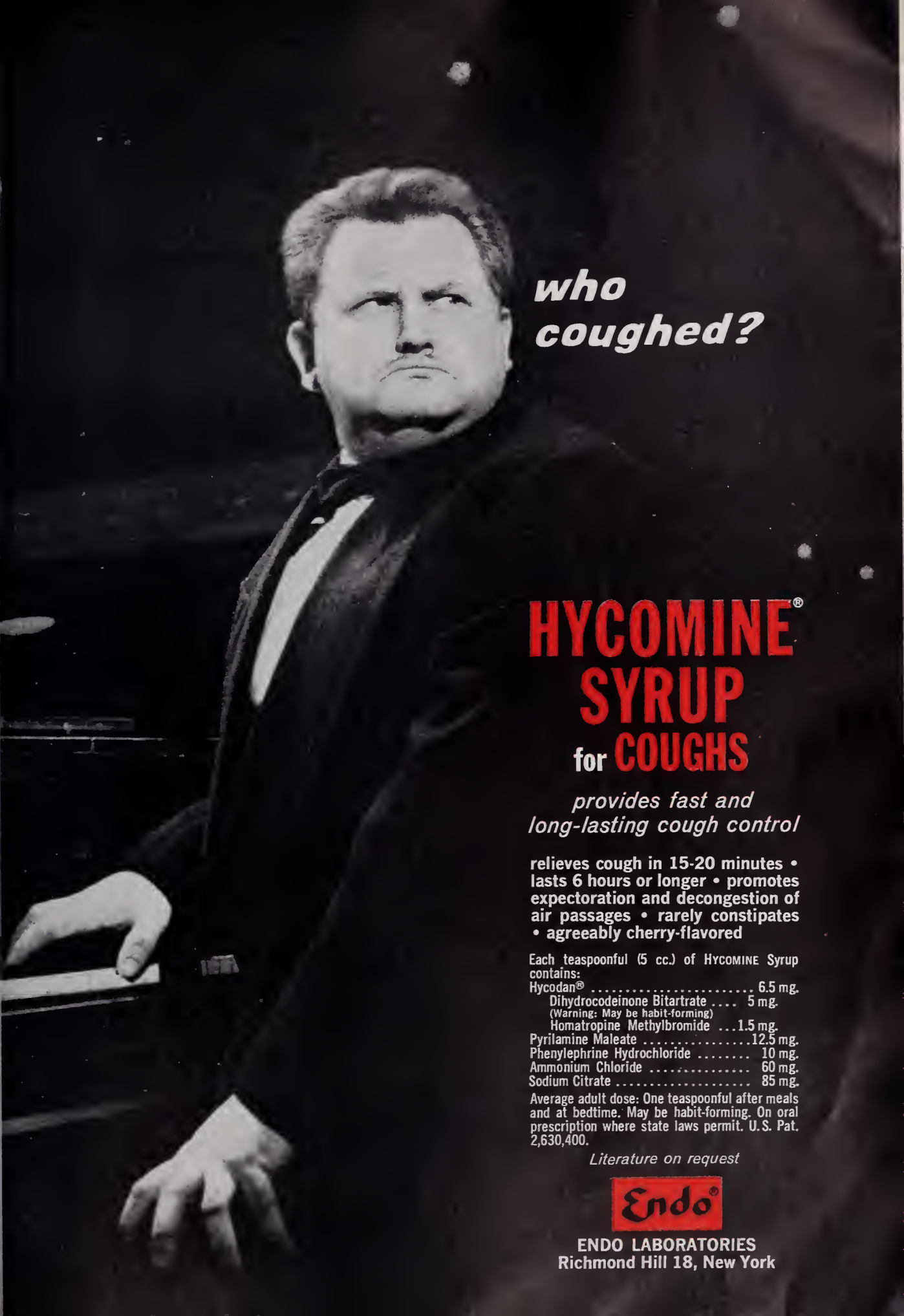
Dosage: Gastric hyperacidity—from 2 to 4 tablets as needed. Peptic ulcer or gastritis—from 2 to 4 tablets every two to four hours. *How Supplied:* Bottles of 50, 100, 200 and 1000.

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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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caffeine	30 mg.
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ascorbic acid	50 mg.

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the case of the missing ampoule

People aren't perfect—neither are machines. Both can slip up occasionally. Take an ampoule in a paper carton for example. How can we be absolutely sure that the ampoule is really inside? ■ Here's how: A machine folds the carton, inserts the ampoule, seals the carton, and then places it on the finishing line. Further down the line, the detective waits—a jet of air sweeping across the finishing line just strong enough to blow an empty carton off the belt. Properly filled cartons proceed for further inspection and packaging. ■ Perhaps a small point, but it is another in a long series of control measures designed to deliver quality pharmaceuticals every time.

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The Journal

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Vol. 114, No. 11

NOVEMBER, 1962

Published Monthly
1430 Tulane Avenue, New Orleans 12, La.

Renal Artery Lesions in Patients With and Without Hypertension A Comparative Study*

• This paper was presented as the Annual Menville Lecture.

WILLIAM R. EYLER, M. D.
MAX D. CLARK, M. D.
JAMES E. GARMAN, M. D.
ROGER L. RIAN, M. D.
DAN E. MEININGER, M. D.
Detroit, Michigan

SINCE Goldblatt produced hypertension in dogs by narrowing their renal arteries, hypertension has become a potentially curable disease. Following this, many investigators have found the association of hypertension and renal artery stenosis. However, there has been little stress put on the fact that the same stenotic lesions can occur in normotensive individuals.

In our group of patients who had angiograms done for arteriosclerotic vascular disease, 1 in 3 had some manifestation of renal artery disease and yet was normotensive. In this group of 500 patients, 409 were examined by aortography for a variety of vascular problems including aneurysm and obstructive lesions; an additional 91 were examined for problems specifically related to the renal area such as abdominal bruit, hypertension, or a previous radiographic renal abnormality. The correlation of the angiograms, clinical records, excretory urograms, and where available the isotope renograms, surgical and pathological findings has been made in an effort to assess the relationships. The angiograms were reviewed and classified prior to the examination of the clinical material and prior to any knowledge of the blood pressure level.

Urograms and Renograms

Although the isotope renogram and special urogram (films taken at ½, 1, 2, 3, 4, 9, 15 minutes following the rapid intravenous injection of 30 to 50 ml. of 75% contrast material) supply the same type of information, the isotope renogram is the more sensitive. Both tests are influenced by the blood supply to the kidney. The demonstrated abnormality of unilateral ischemia includes a slow tubular flow

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 8, 1962.

Henry Ford Hospital—Detroit 2, Michigan

TABLE 1
AGE DISTRIBUTION

Age	Normotensive Normal	Normotensive Abnormal	Normotensive Total	Hypertensive Normal	Hypertensive Abnormal	Hypertensive Total
Less than 31	1	0	1	1	2	3
31 - 40	7	3	10	6	10	16
41 - 50	26	8	34	14	22	36
51 - 60	99	35	134	28	50	78
Over 60	69	56	125	15	48	63
			304			196

This table shows the age distribution of the normotensive and hypertensive individuals and within each age group those having normal renal *arteries* and those with an abnormality.

TABLE 2
DISTRIBUTION OF PATIENTS BY SEX, BLOOD PRESSURE AND PRESENCE OR ABSENCE OF RENAL OR RENAL ARTERIAL DISEASE

	Normotensive—304 Females	Normotensive—304 Males	Hypertensive—196 Females	Hypertensive—196 Males
Renal Artery Abnormality	18	80	42	79
Normal Renal Arteries	35	171	21	54
No Renal or Renal Vascular Abnormality of any type	33	160	17	44
Total	53	251	63	133

rate and increased absorption of sodium and water with consequent hyperconcentration of the contrast material, and certain other constituents. The special urogram may indicate unilateral arterial impairment by a delayed nephrogram, or delayed calyceal filling often with hyperconcentration on the later films. Other renal disease may be associated with delayed calyceal filling, but in this review there was no instance of delay and hyperconcentration without ischemia. The isotope renogram, on the other hand, reflects this disturbance of physiology in some cases of renal artery disease, by prolongation of accumulation and delay in decline of the curve often with flattening of the accumulation phase and sometimes with delay in the initial rise.

For purposes of this study, hypertension has been arbitrarily defined as a casual diastolic blood pressure of greater than 90 millimeters of mercury found on multiple determinations. In our group of 500 patients so analyzed, 196 were hypertensive and 304 were normotensive.

Abnormalities

The abnormalities of renal arteries were classified on the basis of angiographic appearance as indicated below. All types of vascular lesions found in the hyperten-

TABLE 3
DISTRIBUTION OF RADIOGRAPHIC VASCULAR ABNORMALITIES

	Normotensive	Hypertensive
One or more Renal Arterial Plaques with or without other arterial disease	66	77
Unilateral Plaque Only	44	43
Bilateral Renal Arterial Plaques	13	15
Renal Arterial Plaque on one side Diffuse Arteriosclerosis on the other	6	11
Diffuse Arteriosclerosis of one or both renal arteries with or without other arterial disease	21	36
Unilateral Diffuse Arteriosclerosis Only	13	19
Bilateral Diffuse Arteriosclerosis	2	9
Reverse Taper (see text)	16	20
Reverse Taper uncomplicated by other lesions		
unilateral	6	2
bilateral	3	2
Renal Artery Aneurysm Isolated	2	2
Renal Artery Aneurysm with other arterial disease	2	2
Fibromuscular Hyperplasia		
unilateral	2	7
bilateral	0	3
Fibromuscular Hyperplasia Isolated	1	4

sive group were also found in the patients without hypertension.

Plaque:

A localized narrowing of the column of contrast material usually in the proximal portion of the artery, either symmetrical or asymmetrical was termed a plaque.

Diffuse arteriosclerosis:

Arteries showing multiple areas of indentation and change in caliber, including those with two or more plaques in one artery, were classed as diffusely arteriosclerotic.

Post-stenotic dilatation:

Often associated with the arteriosclerotic plaque, there was post-stenotic dilatation; a case was so classified when it showed a localized increase in caliber in the area just beyond the stenosis with return to a smaller diameter before proceeding with the normal tapering. Those arteries which were diffusely enlarged distal to a stenotic area were classed as diffuse arteriosclerosis rather than post-stenotic dilatation.

Fibromuscular hyperplasia:

The classification of fibromuscular hyperplasia was made when there were multiple transverse bands crossing the contrast column producing a "beaded" appearance. These lesions are located in the distal two thirds of the main renal arteries and the proximal branches. Taper may be increased or reversed. Stenotic lesions in the distal portion of the main artery are suggestive, and if accompanied by typical changes on the opposite side are also so classed.

TABLE 4
POST-STENOTIC DILATATION

	Normotensive	Hypertensive
Unilateral Renal Arterial Plaque (Opposite artery unspecified)		
With post-stenotic dilatation	35	39
Without post-stenotic dilatation	16	20
Total	51	59
Bilateral Renal Arterial Plaque		
With post-stenotic dilatation	10	15
Without post-stenotic dilatation	5	3
Total	15	18

It has been suggested that post-stenotic dilatation indicates that a lesion of a renal artery is physiologically significant. The angiograms were all inspected for this finding. If there were bilateral renal arterial plaques with post-stenotic dilatation on one or both sides the case is included under post-stenotic dilatation.

TABLE 5
SEVERE STENOSES

Patients with a patent artery showing a lumen narrowed to 2.0 mm. or less.

Normotensive	Hypertensive
8	10

Reverse Taper:

Two hundred and fifty normal renal arteries were measured at the origin, one centimeter beyond the origin, and just before division. It was found that in normal arteries there is a relatively wide mouth, but that from the level of one centimeter beyond the origin to the first point of division there is a gradual gentle taper of 1 to 2 millimeters in diameter. When arteries increased in caliber beyond the 1 cm. point and showed no other abnormality they were classified as showing reverse taper. This has been assumed to be an arteriosclerotic manifestation, but positive proof is lacking.

Contralateral Renal Artery

It is important to show the status of the contralateral renal artery in a patient being considered for a surgical approach to renal hypertension, even though it may be apparent that one kidney is an obvious offender and therefore the focus of surgical attention. Improvement of only 19 to 33 per cent of nephrectomized hypertensive patients[3, 12] suggests that a number of failures may be related to unsuspected contralateral renal artery disease. A nonfunctioning kidney may be fibrotic rather than ischemic and a stenotic lesion of the artery to the "good" kidney may be causing the hypertension. Further, a stenotic lesion which is relatively unimportant to a kidney until a contralateral nephrectomy has been performed then becomes significant when this kidney subsequently undergoes compensatory hypertrophy with

resultant ischemia and possible recurrence of hypertension.[10, 11] It is not possible to determine completely the status of the renal vessels by inference from the urinary findings or the blood chemistries and separate collection and analysis of urine from the two kidneys only provides an estimate of the comparative behavior of the two sides.

Therefore, an angiographic study of the renal area should be made when any features of the history, physical examination, isotope renogram, or excretory urogram suggests a surgical approach to hypertension for a potential renal area lesion.

It becomes apparent after reviewing the data and cases of renal artery disease associated with normotension that there are factors involved other than the simple presence of a renal arterial abnormality. Experimental work of Schlegel and Okamoto[11] is pertinent when constructing a hypothesis to relate these various findings. They found that after a nephrectomy and application of a Goldblatt clamp to the contralateral renal artery of a dog, hypertension persisted in the experimental animal until they removed a quarter of the remaining kidney. Allen, Bollman and Mann[1] found that removal of two-thirds of the renal tissue would result in only a temporary uremia and no hypertension.

Glomerular counts by Moore[8] showed that the number of glomeruli decreased with age to almost one-half the number found in young individuals. Davies and Shock[4] studied the changes in renal function with age and found that the diodrast maximum tubular function (T-max) decreased linearly beyond the age of 30 years and by age 90 dropped to 43 per cent of the value for age 20. Similarly the diodrast clearance (renal plasma flow) dropped to 54 per cent while the average inulin clearance (glomerular filtration rate) dropped to 46 per cent over the same period of time.

Anderson[2] states:

"Atherosclerotic involvement of larger and medium sized intrarenal arteries is a patchy change which results in irregular depressed areas of the kidney surface. The kidney is not much decreased in size unless there is some other pathologic change. Microscopically, fibrous replacement of glomeruli and tubules is present in scarred subcapsular portions of the cortex. There is some cellular infiltration by lymphocytes and plasma cells. These changes in the kidney are rarely associated with any marked hypertension or renal functional failure."

This, then, is the arteriosclerotic kidney which may well have a sufficiently reduced amount of functioning renal tissue so that the demands on the renal circulation can be met by the compromised arteries without production of renal ischemia.

Pyelonephritis

Weiss and Parker[13] described vascular lesions in pyelonephritis and Heptinstall, Michaels and Brumfitt[6] have shown the angiographic appearance of experimentally produced renal vascular lesions associated with pyelonephritis. A similar appearance can also be shown in man (Case 2). In human pathological material,[7] Kincaid-Smith, noted that pyelonephritic lesions producing ischemic areas were accompanied by hypertension. Further, the converse was true that where the parenchymal destruction was found without evidence of ischemia, hypertension did not ensue. In tuberculosis and hydronephro-

TABLE 6
PYELONEPHRITIS
Major Arteriographic Lesions

	Normotensive	Hypertensive
Without Arterial Lesions	3	6
With Arterial Lesions	2	9
Total	5	15

In Case 2 illustrated in this paper, changes in the smaller arteries are seen. These small arteries show tortuosity and a beaded appearance. This type of change is analogous to that described by Weiss and Parker and resembles closely what has been shown experimentally by Heptinstall, Brumfitt and Michaels. In the other cases of pyelonephritis there is a relatively higher incidence of diffuse sclerosis but the roentgen appearance of these lesions in the main renal arteries and of the plaques in these arteries does not differ from the lesions in the patients without pyelonephritis.

TABLE 7
KIDNEY LENGTH DISPARITY

	Normotensive	Hypertensive
Less than 1 cm. disparity	294	127
1.0 cm. or more disparity	50	69

Recently much attention has been directed to the measurement of the length of the renal shadows on films of the abdomen or on urograms. A disparity in length of 1.0 cm. or more has been said to be indicative of possible renal or renal vascular disease responsible for hypertension. The measurements used in this table were, whenever possible, obtained from the angiograms inasmuch as greater accuracy was obtained when the kidneys were well opacified. When this was not possible, use was made of other films. It is thought that the measurement of length disparity has not suffered from this approach although slightly more magnification is produced by the angiographic technique.

sis, renal parenchymal destruction predominates and these lesions are not usually associated with hypertension.

Discussion

The occurrence of severe renal artery lesions in patients having a normal blood pressure is stressed in this report. On the other hand the development of hypertension following acute renal arterial obstruction has been well documented. Why, then, do the latter develop hypertension while the former do not? The following hypothesis supported both by the data presented and experimental work of Schlegel is offered: When there is a balance between the available blood supply and the amount of functioning renal parenchyma, normotension results. If there is a greater diminution of blood supply than there is of functioning renal parenchyma, ischemia and hypertension may follow. A corollary then follows: If major renal artery disease is present, arteriosclerosis of intrarenal arteries (the arteriosclerotic kidney) or other factors which reduce the amount of functioning renal parenchyma may cause lowering of demand so that there is no ischemia and no hypertension. The utilization of angiography, the isotope renogram, and the special urogram in investigation of hypertensive patients will usually clarify the situation.

Case Reports

Case No. 1. D. Y. The patient is a 61 year old white male who returned for progress angiograms sixteen months after a successful abdominal aortic aneurysmectomy. Throughout his course his blood pressure had been 120/70. His blood urea nitrogen was 16.0 mg. per cent and



Figure 1, Case 1. D.Y. Renal arterial stenoses without hypertension.

Figure 1a. Renal angiogram. Severe stenosis of the proximal portion of the left renal artery is well shown. A similar stenotic lesion on the right side is less well seen.

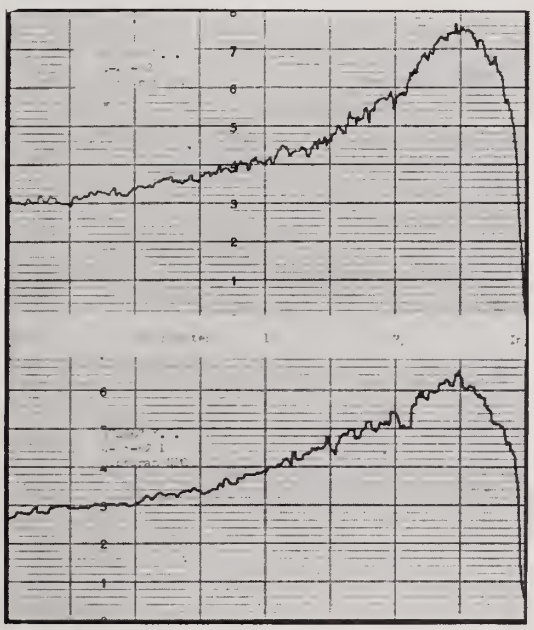


Figure 1b. Isotope renogram. The isotope renogram is normal on each side.

Figure 2. W. P. Angiographic changes in pyelonephritis.

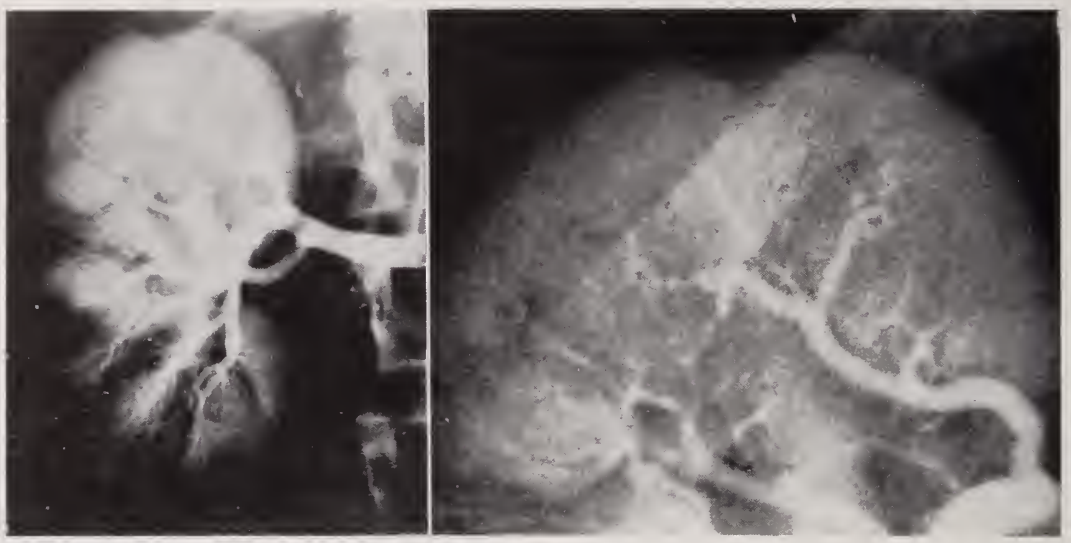


Figure 2a portrays the entire kidney and Fig. 2b is a magnification taken from the same film but including only the upper pole of the kidney. Tortuosity and beading of the small arteries within the kidney are shown. Changes are similar to those previously reported in pyelonephritis.[5, 6]

creatinine was 1.0 mg. per cent. The angiogram demonstrates a marked stenosis in the left renal artery just distal to its origin. There is also a stenosis in the proximal part of the right renal artery though this is not quite as well shown. These stenoses were unchanged from the previous angiogram sixteen months before. The isotope renogram shows a normal tracing on each side with an early peak just before four minutes and a normal drainage phase. This case is considered a classical example of severe renal arterial stenosis but with blood supply adequate for the remaining parenchyma so that balance is preserved and no hypertension results. The normal isotope renogram is expected under these conditions.

Case No. 2. W.P. The patient is a 38 year old white male who was presented because of sterility. He had a blood pressure of 130/82. Urinalysis included the finding of 20-30 white cells per high power field and subsequently *E. Coli* was cultured from the urine. The blood urea nitrogen was 7 mg. per cent and creatinine was 1.0 mg. per cent. By excretory urogram the left kidney was seen to be small with loss of cortex, but with only moderate enlargement of the drainage system. On the right side there was compensatory hypertrophy. The test dose for the renal angiogram was fortuitously directed into the right renal artery. A film made at that time demonstrates a normal main artery and shows normal primary branches with the exception of a minimal narrowing of the superior branch. The smaller renal arteries in the upper pole, however, show beading and tortuosity, though elsewhere they are normal. These changes are similar to those previously described in pyelonephritis.[5, 6]

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Silicosis in Louisiana: New or Unrecognized Industrial Hazard*

• A recent case of silicosis in a sand blaster is presented along with an industrial survey which helped prove the diagnosis. The significance of this disease in Louisiana was reviewed and the author believes that only two cases have been reported in this State.

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IN 1960 two young colored male patients died at the Charity Hospital in New Orleans, within several months of each other, of a severe form of pulmonary fibrosis. Both of these patients had worked for several years as sand blasters in the same steel boat building plant in South Louisiana. Investigation of the working conditions at this plant by the Louisiana State Board of Health revealed that these men had been working in concentrations of silica dust high enough to produce silicosis.

Inquiry with the State Board of Health revealed that there has not been an established bonafide case of silicosis reported to the Occupational Health and Safety Section since its establishment in 1942. It is this section of the Division of Preventive Medicine that is responsible for investigating industrial health hazards, and through whose efforts the diagnosis of the Charity cases was established. In a report by a member of the U. S. Public Health Service in 1956 concerning the prevalence of silicosis in the United States,[1] Louisiana was not included amongst the states canvassed for information. In a breakdown of silicosis cases by types of industry, sandblasting was not mentioned.

Because of this apparent lack of any published information pertaining to the incidence of silicosis in our state, and because the authors feel that there are probably many other cases of this disease as well as other industrial dust diseases, we feel a discussion of this problem and presentation of one of the cases is indicated.

Pneumoconioses

Silicosis is a disease that is classified under the harmful or major pneumoconioses. To understand the pathogenesis of this disease we need to discuss pneumoconiosis, a Greek word meaning "dust retained in the lung". All our lives we inhale dust with each and every breath.[2] In general, city air contains over twice as much dust as country air, and the working atmosphere in many industries even more tremendous amounts of dust. Most dusts are innocuous, but a few have varying capabilities to produce pulmonary disease. Dust is air in which are suspended various particles of material of about 150 microns in diameter or less. As a general rule all particles of dust five microns or greater settle out of the air in the nasopharynx, upper respiratory passages or lower respiratory passages depending on their size (descending lower in the air-way with decrease in size). These particles, if they are insoluble, are cleared from the respiratory tract by the action

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of the cilia and mucus-secreting epithelial cells and coughing. They are then either expectorated or swallowed. Particles below five microns in size reach the alveoli, where they are engulfed by the phagocytic cells that either conduct them to the respiratory mucosa to be expectorated, or carry them to the pulmonary lymphatics and tracheobronchial lymph nodes where they are deposited. Some may even traverse the thoracic duct and enter the systemic circulation. The storage of insoluble dust in the lung during life is in direct proportion to the concentration and duration of dust inhaled and in inverse proportion to the size of the particle. Excessive deposition of dust in the lungs results from prolonged inhalation of high concentrations of particles that are less than ten microns in diameter. In the face of this excessive deposition, the self-cleansing mechanism becomes overloaded and the dust is deposited in the pulmonary lymphatics, perivascular and peribronchial sheaths and in lymphoid foci. Thus does a pneumoconiosis develop.

The type which develops depends on the nature of the particle, and the presence or absence of pulmonary disability depends on the reaction of the lung tissue to the presence of these particles. Inert dust, such as carbon that we all breathe, does not produce a tissue reaction (e.g. inflammation), and does not produce shadows on the chest roentgenogram because of its low density. It does stain the lung black and hence explains the postmortem finding of the black lung of the perennial city-dweller versus the pink lung of the country-dweller or the infant or young child.

There are other inert dusts that are inhaled as by-products of various industrial processes that produce symmetrical scattered nodules on the roentgenogram because of their density but no disability because there is no inflammatory reaction to their presence. Thus we may see siderosis due to deposits of iron oxide in electric arc welders and baritosis in individuals who work with pure barium sulfate. These are classified[3] as examples of the benign pneumoconioses.* Silica dioxide in sand and the silicates found in asbestos and talc and mica produce an intense fibrosis tissue reaction, each of a rather specific type, that results in severe crippling pulmonary disease. These are classified as examples of major pneumoconioses. Lastly, there is a group of dusts that produce pulmonary disability that is not as severe as that produced by silica. Examples of these are cotton, mouldy sugar cane, and mouldy hay producing byssinosis, bagassosis, and farmer's lung, respectively.

Silica Dust

Through the studies conducted between 1914 and 1935 by the U. S. Public Health Service, U. S. Bureau of Mines, and other research workers,[4] it has been established that the critical factor for the development of silicosis is the inhalation, over an eight-hour day, of silica dust containing more than five million particles of ten microns or less in diameter of free silica per cubic foot of air. It seems apparent that the time it takes to develop clinical silicosis depends on the concentration of the free silica particles, duration of exposure, individual susceptibility, and size of the particle, the smallest or even ultramicroscopic sizes producing a more immediate reaction. Siliceous dusts,[5] and any dusts for that matter, are formed by such processes as vigorous mechanized attrition, blasting, grinding, drilling, rubbing, crushing, hammering, sawing and metallic fumes by heating or boiling. We thus see silicosis in industries where these processes are utilized. The types of industries can be broken down into three groups—mining, manufacturing, and miscellaneous. Examples of types of mining are coal, iron, copper, silver, lead and zinc, tunneling and granite quarrying. Amongst manufacturing industries are such activities as pottery, glass, tile and clay, stone cutting and finishing, and foundry work. In the miscellaneous group we find sandblasting as one example. Sandblasting is the process of projecting a stream of sand

* See Reference 3 for complete classification.

by means of compressed air or steam against a surface. It is used in metal works to remove adherent sand and irregularities from castings, to produce on clean metal a surface suitable for subsequent treatment by coating with enamel or another metal, for etching glass, and for removing paint from and otherwise cleaning large surfaces such as ships and buildings.

After variable, usually prolonged inhalation of silica dust, the lung tissue reacts to the phagocytized silica particles by the development of concentric whorls of dense hyaline collagen fibers forming rather uniform fibrous nodules throughout the lung parenchyma and tracheobronchial nodes. When these nodules reach 2-4 mm. in diameter they become radiologically visible and are usually associated with some pulmonary disability. With continued exposure, and frequently after cessation of exposure, the nodules may increase in size, and finally coalesce to form large fibrotic conglomerations and massive fibrosis. These fibrous lesions produce severe pulmonary disability as a result of distortion and compression of the alveoli, with emphysema, atrophy, disappearance of the interalveolar septa, and loss of the pulmonary capillary bed. The disease may be complicated by the development of tuberculosis, aseptic necrosis of large nodules, secondary bacterial pneumonias, pneumothorax, respiratory insufficiency, and cor pulmonale, any or all of which contribute to or cause death.

Case Report

History: C. E. This 28-year-old colored male was admitted to Charity Hospital of Louisiana at New Orleans March 22, 1960. He was apparently perfectly well until six months prior to admission when he developed progressive exertional dyspnea, non-productive cough, night sweats, fever and 15-pound weight loss. At the time of admission he stated that his dyspnea was of such a nature that he had to rest after walking one block or climbing one flight of stairs. He denied hemoptysis, chest pain, orthopnea, paroxysmal dyspnea, abdominal swelling and ankle edema. Complete review of systems did not elicit any difficulties in any other organ system. Past history was non-contributory to the present illness. For the past five years he has been working as a sand blaster and metal worker in a local shipyard. He stated that he wore a mask when working. A detailed description of the nature of this work was not obtained at the time of admission.

Physical Examination: T. 100.6°; P. 110; B. P. 116/60 (RA); R. 28. The patient was a thin, well-developed colored male who was in no apparent distress. There were crepitant and sub-crepitant rales throughout all lung fields anteriorly and posteriorly. Chest expansion was described as normal. There were no other adventitial respiratory sounds. There was a small left supraclavicular and epitrochlear node. Examination of all other organ systems was entirely normal.

Laboratory Examination: Packed cell volume 41. WBC 6,000 with 70 segmenters and 30 lymphocytes. Blood smear was normal. Urinalysis was normal except for a 2+ protein that was negative on a subsequent examination. Blood sugar, urea nitrogen, chlorides, carbon dioxide content, phosphate, calcium, alkaline phosphatase and serological test for syphilis were negative. Febrile agglutinations for typhoid H, O and para B, brucella, tularemia, and OX-19 were negative. The total serum protein was 8.3 and 8.6 with a 2.9/5.4 and 3.5/5.1 albumin-globulin ratio respectively. Serum electrophoresis was normal. PPD #1 was negative and #2 strongly positive. Skin tests for coccidioidomycosis, blastomycosis and histoplasmosis were negative as were the complement fixation tests. Concentrations of 11 sputa for tuberculosis were negative, but two cultures of these grew out atypical acid-fast bacilli that were photochromogenic (Mycobacterium kansasii). Two gastric washings grew out the same organisms. Excision biopsy of the left epitrochlear node and left and right scalene node biopsies revealed reticulo-endothelial hyperplasia on histological examination. Culture of this material was negative for tuberculosis and fungi.

Roentgenographic Examination: Chest x-rays revealed bilateral hilar adenopathy with diffuse granular and nodular parenchymal infiltration. These x-rays did not change during the patient's entire clinical course. X-rays of the hands were normal. (See Figure 1.)

Pulmonary Function Studies: This patient's vital capacity was 2425 cc. (calculated normal 4245 cc.), his timed (three-second) vital capacity 90 per cent (within range of normality), and his maximal breathing capacity was 82 liters per minute. There was no change in these studies following bronchodilators. Arterial oxygen tension studies showed resting hypoxia (PaO_2 80.20 mm. Hg) that drops with exercise (55.25 mm. Hg), and a PCO_2 that rises with exercise (from $PaCO_2$ 38.11 at rest to $PaCO_2$ 55.25 with exercise). His arterial oxygen sat-



Figure 1.—Admission x-ray of the lung showing diffuse granular and nodular parenchymal infiltration with fibrosis and hilar adenopathy.

uration studies showed failure to saturate to 100 per cent after breathing 100 per cent, 40 per cent and 32 per cent oxygen. When exercising while breathing these percentages of oxygen, his arterial oxygen saturation dropped. These function studies reveal predominately restrictive ventilatory dysfunction due to loss of lung elasticity secondary to fibrosis. His arterial blood gas analyses are markedly abnormal and indicate disturbances in the relationship of ventilation to perfusion.

Course in the Hospital: For the first three weeks this patient was febrile, spiking daily temperatures to 101°, 102°, and 103° F. On the tenth hospital day he was transferred to the Tuberculosis Service, and placed on isonicotinic acid hydrazide and para-aminosalicylic acid. This was continued until his death. Later in the course of his illness streptomycin was added.

On August 8, 1960, the patient had a thoracotomy and biopsy of the lingula segment of the left lung. Histological sections showed fibrosis of the pleura, and scattered fibrous thickening of the aveolar septa. One section showed a granulomatous inflammation with giant cells and clefts. This lesion was thought to represent lipid granuloma. This patient's immediate post-operative course was uncomplicated.

His entire hospital course was marked by a paucity of complaints. He ate well, and was up and walked around the ward with the other patients, complaining of dyspnea only when walking fast. He did well until November 24, 1960, when he began to complain of pain in his stomach, nausea and vomiting, and progressive dyspnea. He expired on November 30, 1960. A roentgenogram of his chest taken a short time before his death showed a right pneumothorax.

Autopsy: On opening the thoracic and abdominal cavities the hilar and aortic lymph nodes were found to be enlarged, rubbery, and gray-brown in color. Both lungs were collapsed against the mediastinum and dense fibrous adhesions attached the pleura to the posterior and lateral chest cage. The pleura was opaque and thickened. Cut section revealed dense consolidation of the right upper lobe and the peripheral two-thirds of the left lung. (See Figure 2). These areas of consolidation were gray to black in color and had a hard, gritty consistency. The remainder of the lungs had less fibrosis and pigmentation, but the entire parenchyma was involved to some degree. The right lung weighed 670 grams and the left 700 grams. The spleen was enlarged and firm (310 grams).

The predominant microscopic finding in the lungs was massive fibrosis with complete oblit-



Figure 2.—Sagittal gross section of left lung showing extensive fibrosis.

eration of normal lung architecture. (See Figure 3). Examination of these areas of fibrosis using



Figure 3.—Photomicrograph of silicotic nodule in lung showing dense fibrosis.

polarized light microscopy revealed many birefringent crystals less than four microns in size consistent with silica dioxide. The other lung sections showed secondary pneumonia, fibrosis, and emphysema. Small non-caseating granulomata were noted in the liver and kidneys. (See Figure 4). The enlarged lymph nodes showed

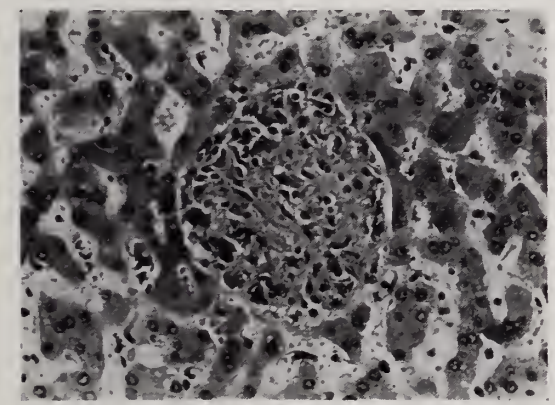


Figure 4.—Silicotic granuloma in liver. This represents silica dioxide dust particles that have gained entrance into the systemic circulation via the thoracic lymphatic duct.

reticuloendothelial hyperplasia and fibrosis, without caseation. Special stains for acid-fast bacilli and fungi were negative on all tissues. There was no evidence of caseation necrosis.

Industrial Survey

This survey, conducted by one of the authors, an Industrial Hygiene Engineer, was an on-the-spot investigation of the physical aspects of the working environment in the ship-building plant where the patient had been employed. The building where the blasting was performed was 60 feet wide, 100 feet long and 30 feet high, and open at both ends. A moveable fan was provided for blowing the sand away from the sandblasting operator but there was no forced ventilation or dust collection apparatus. Because of the abrasiveness of the sand which is propelled at high velocity against the steel boats, an air-supplied head mask was invariably worn by the operator as a physical protective device. Two other men usually work in the building while the blasting is being done; one is metallizing the steel hull, and the other is taking care of the sand screening device. Most of the time these two men did not wear respirators. During blasting there was a continual cloud of fine sand dust near the boat and these men. When the inside of the hull is being blasted, the used sand drops to the bottom and is sucked out; when the outside of the hull is being blasted the sand falls along the sides and is swept to a conveyor which takes the fractured sand to a screening device where the coarser particles are collected for re-use. There was no means of controlling the dust cloud around the conveyor or sand screening device.

Dust samples were collected in and around the building. These samples are obtained in a Mine Safety Appliance Midget Impinger[6] using distilled water and a suction rate of 0.1 cubic foot per minute through the impinger bottle. Actually, the impinger is a small box that is carried over your shoulder. In the box is a small bottle of distilled water through which the air is sucked by manual operation of the handle. The particles in the air drop out in this solution. The solution is then placed in a Dunn Dust Counting Cell that looks much like a hemocytometer, and under 100 magnification in the light microscope, the total number of particles under ten microns in size are counted. Knowing the suction rate of the impinger which is 0.1 cubic foot per minute, and the total time over which the sample was collected, one knows the total number of cubic feet of air that was sampled. The particle count is then expressed as

million particles of dust per cubic foot of air sampled (mppcf).

Remembering that the maximum allowable concentration of silica dust for an eight-hour working day is five million particles per cubic foot, in this area the following dust counts were obtained:

I. Inside blasting building while blasting.
   a. 27 mppcf near south end of boat being blasted.
   b. 29 mppcf 25 feet from the sandblaster.
   c. 21 mppcf at end of building away from sandblasting zone.
   d. 71 mppcf in an area where the velocity of air was zero.

II. Outside the blasting building while blasting.
   a. 36 mppcf near south end in air draft where smoke plume was emerging from the building.
   b. 25 mppcf close to blasting area.
   c. 15 mppcf ten feet away from the unfiltered exhaust of the sand separator.
   d. 2.5 mppcf near an office 200 feet away.
   e. 4 mppcf in a shop 100 feet away.

III. Other areas.
   a. The dust count in the air supplied to the hood of the sandblaster was 0.1 mppcf.
   b. The dust in the air outside the building thirty minutes after sandblasting had stopped was 0.2 mppcf.

Our patient apparently worked here for from five to six years, and it is presumed worked under the conditions stated above. In an eight-hour day the blasting machine is only operating about four hours. The men who actually do the blasting are rotated from one job to another within the plant so they will not be in this exposed environment all the time. A break-down into the exact number of days that this man did blasting over the six years of employment cannot be determined.

Conclusions

We have attempted, and I hope successfully, to pinpoint this as a case of silicosis arising out of the sandblasting occupation. Hunter[5] states:

> "that silicosis is found amongst sandblasters in various parts of the world, and the same features—a short period of employment and rapid course of the disease—characterize all the cases. The average length of employment of sandblasters before death was at one time about ten years as compared with forty years in the other silicosis-producing industries".

He further mentions that in cases of silicosis where the exposure to dust has been intense, and the course of the disease relatively rapid, that the individual silicotic nodules become so crowded together that practically no lung tissue is seen. Drinker and Hatch,[7] quoting from the literature, mention that cases of silicosis have been described developing after only eight months' exposure, and some fatal cases after only one and one-half years' exposure. These comments hold true in our case. This patient was exposed both inside and immediately outside the blasting building to from 20-30 mppcf of silica dust less than ten microns in diameter, which is five to six times the maximum allowable concentration as established by the American Conference of Governmental Industrial Hygienists. His length of employment before death was only six years, and his lungs showed extensive fibrosis of a type seldom seen in any other condition. The question might be raised that the sandblaster always wore a hood and that the concentration of silica under it was 0.1 mppcf, much below the allowable limit. We need only remember that these men rotated their jobs, and that most of the time two of them worked in lethal environments of silica dust without respirators. Furthermore, silica dust counts were not made in the immediate environment of the blasting after the machine was turned off. It is quite possible that the counts remained high for a considerable period of time after the machine was turned off, and that the operator removed his helmet while staying in this area. It should also be stressed that smaller, more lethal particles, one micron or less may remain suspended for longer periods of time, and may not even

produce visible smoke plumes because of their low density.

At the present time we have under observation a patient we have been treating with adreno-cortical steroids for disabling pulmonary sarcoidosis. Our diagnosis was based on the clinical picture and a lung biopsy which showed non-caseating granuloma around vessels. He never responded to steroids and over the months while on this treatment, his x-rays showed progressive pleural and parenchymal fibrosis of both upper lobes. Extensive questioning at this time revealed that immediately prior to his illness he had worked as a sandblaster in an armature works for nine months without a mask. Does he have silicosis?

This has been an enlightening experience for those of us who do not usually think of silicosis in the differential diagnosis of chronic lung disease in patients native to Louisiana. Sandblasting may be a more prevalent occupation than we know. With growing industrialization in the south, occupational diseases will become more and more important, and I believe it should prompt us to take more carefully detailed occupational histories. Furthermore, the Louisiana Occupational Disease Law passed in 1952 includes silicosis and the other pneumoconioses as compensable diseases.

Summary

A recent case of silicosis in a ship sandblaster has prompted us to review the significance of this disease in Louisiana. We are aware of only two reported cases in the state—this one and one other. The pathogenesis and pathology of silicosis is discussed. The case with autopsy findings is presented, along with an industrial survey which helped prove the diagnosis. We conclude that growing industrialization in the south should prompt us to be aware of this disease and other pneumoconioses.

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Discussion

Dr. Louis Monte (New Orleans): Doctors Bobear, Hanemann and Beven are to be congratulated for bringing to our attention the existence in our locale of a causative occupational factor of so crippling and death producing disease. As with so many other physicians in the state of Louisiana, I cannot recall ever having seen a patient with silicotic disease of the lung whose origin emanated from an occupation in our state. Such a feeling of security over the many years might well have caused us to fail to give proper and serious consideration to silicosis in patients whose x-rays showed a diffuse nodular fibrotic infiltrate and in whom no specific etiology could be established. We have been more prone to stress better established diseases such as tuberculosis, sarcoid and histoplasmosis. This timely presentation should and will cause us to move silicosis a notch or two higher on the ladder of suspicion when confronted with patients presenting clinical and x-ray features compatible with silicosis.

The authors are especially commended for their perseverance in establishing the etiologic factor that produced such a pulmonary fibroblastic response in their fatal case. By correlating a more detailed occupational history, the clinical and x-ray features, the pathologic findings and the atmospheric analysis for the disease producing silica particles by a competent

sanitary engineer, the authors have proved the diagnosis of silicosis. More important they have incriminated an occupation to be found in various parts of the state and not previously recognized. This should and will place the medical profession on guard for any new and previously non-suspected industrial hazards.

While preparing this discussion, I began thinking of the aluminum ore known as bauxite. This ore contains silica and the manufacture of aluminum therefrom is a comparatively new industry in our state. When we take into consideration the required conditions under which clinical silicosis occurs, it is imperative that the potential of a hazard be suspected before such a progressive and crippling disease as silicosis develops.

In closing these brief remarks it is well to remember that we can enlist the aid of the Division of Preventive Medicine of the State Board of Health for thorough investigation of a suspected dust hazard in a given situation.

An Appalling Development in Government Control

Physicians very often have differing opinions about the usefulness of an agent in treating a particular disease. Many eminent physicians, for example, favor the use of the corticosteroids in the treatment of rheumatoid arthritis, but others believe that corticosteroids are not the drug of choice for this purpose. Under such circumstances, it is difficult, if not impossible, to determine the exact effectiveness of the corticosteroids in treating rheumatoid arthritis. It would be an appalling development to have the Food and Drug Administration, directly or indirectly, limiting the rights and responsibilities of a prescribing physician by determining, for example, the corticosteroids should not be marketed because of the FDA's opinion that they lack efficacy.—I. S. Ravdin, M. D., Professor of Surgery, University of Pennsylvania School of Medicine, to House Interstate and Foreign Commerce Committee, August 20, 1962.

Diabetes Mellitus -- Aspects of Interest To The Gastroenterologist*

• A number of gastrointestinal symptoms and signs peculiar to diabetics are presented. Some may be lethal, such as carcinoma, and others, such as diarrhea, simply complicate the management of the patient.

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Introduction

ORDINARILY, physicians interested in diabetes mellitus are concerned with the endocrine aspects of pancreatic function and gastroenterologists are concerned with the problems of external pancreatic secretion. In spite of the fact the organ is small and pathology of the islets and acini is common, one rarely finds overlap here between the two specialties. Indeed, destructive lesions of the pancreas, such as carcinoma or chronic relapsing pancreatitis, may be associated with diabetes mellitus, but only after many acini have been affected. In fact, from a functional standpoint, one almost can consider the pancreas as two organs.

Diarrhea

The commonest gastrointestinal disturbance associated with the disease, diabetes mellitus, is an alteration in bowel habits, either constipation or diarrhea. Constipation is more common,[1] but diarrhea has caused more interest in the literature and is more difficult to control. Bargen, et al.[2] are generally credited with the first clinical description of the diarrhea of diabetes. They also noted failure of the diarrhea to respond to pancreatic replacement therapy. Since then numerous reports have appeared citing the clinical characteristics of the problem.

First, alterations in bowel habits usually occur in individuals who have had diabetes mellitus of fairly long-standing. In one report[3] of 28 cases of diarrhea developed at an average age of 42.3 years and the diabetes had its onset at an average age of 35 years. The observation has been made also that there are often signs of autonomic neuropathy present. In fact, widespread involvement of the autonomic nervous system is not uncommon in these patients. This may be manifested by impotence, difficulty in emptying the urinary bladder properly, postural hypotension, absence of sweating, etc.

Much has been said about the nocturnal component of the diarrhea and there are many recorded instances where it has occurred only at night. For example, 10 of the 28 cases reported by Malins and French[3] had nocturnal diarrhea only. Many think that this is highly characteristic of diabetic diarrhea. However, it has been my experience that these patients having diarrhea at night also have frequency of bowel movements in the day time. In fact, the nocturnal component has been a very useful clinical point for me in distinguishing organic from functional diarrhea. It seems that for some peculiar reason the bowel affected with an organic lesion loses its synchrony with the clock and stools are passed at irregular intervals throughout the twenty-four hour period.

Organic lesions of the bowel have not been demonstrated in microscopic study. In a large autopsy series, Berge, et al.[4] were unable to find any characteristic lesion of the bowel wall or the contained nerve endings. Likewise, there are a few

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reports[5, 6] of peroral jejunal biopsy in diabetic patients with diarrhea and these have all been normal.

Pancreatic function, as measured by the standard secretin test, has been normal in diabetics both with and without diarrhea.[7] Likewise, the diarrhea has failed to respond to pancreatic replacement therapy.

The failure to demonstrate an organic lesion in the bowel and the frequent concurrent finding of wide-spread autonomic neuropathy have led to the present day hypothesis that some abnormality of the autonomic nerve supply of the intestine causes the diarrhea and constipation. In the light of this one is reminded of the diarrhea that may follow a simple vagotomy.

It would seem desirable to establish the best diabetic control possible. However, here I must give a pessimistic outlook. Of 16 cases of Malins and French[3] who achieved good control for one year or longer, only 3 were permanently relieved of diarrhea.

The report of the same authors[3] on the efficacy of antibiotics in this disorder is most interesting. Chlortetracycline was administered to 22 cases and 16 got complete control of diarrhea. The diarrhea may be intermittent and some patients found that 250 mgms. at the onset of an attack would control the entire episode. Others found 250 mgms. per day or 250 mgms. per week would afford control. This raises the question of whether or not some alteration in the intestinal flora causes the diarrhea or if simple alteration of the flora with an antibiotic can control the attack. Similar observations on the effectiveness of antibiotics in sprue have been made. However, the problem here is different for an organic lesion of the mucosal surface is well established and an intolerance to gluten, or more particularly, to its glutamine content is known. I have no experience with antibiotics for treating diabetic diarrhea and present it only for your consideration and interest.

Steatorrhea

In most diseases associated with excessive fat excretion in the stool there is either an anatomical or biochemical defect to at least partially explain the failure of absorption. For example, in sprue there is diffuse involvement of the mucosa with flattening of the villi and absence of the micro-villi, resulting in loss of much of the absorptive surface. Also, there is the biochemical defect previously mentioned, in some way related to the glutamine content of gluten. In pancreatitis there is a measurable lack of pancreatic enzyme secretion.

The problem of steatorrhea in diabetics has been different. Generally, it is mild in nature, but very real, and usually lacking other evidence of the malabsorption syndrome. It may be intermittent in spite of continuation of diarrhea.[3] However, there are two cases reported[8] in which there was anemia, small bowel deficiency pattern, and abnormalities of multiple parameters of fat absorption. One of these had a jejunal biopsy which showed clubbing and flattening of the villi, changes not unlike those seen in sprue. This, of course, raises the interesting question of whether or not two diseases, sprue and diabetes mellitus, existed in the same patient. It is also noteworthy that both patients responded to corticosteroids. Another case[6] of steatorrhea with jejunal biopsy has been reported and this diabetic patient had normal villi. Additional cases will have to be biopsied before this problem of an anatomical defect can be settled.

Vitamin B-12 absorption has been measured in 40 diabetics with the standard Schilling test because of the previous observation of an abnormality of Vitamin B-12 excretion in diabetics with retinopathy.[9] In their patients, not selected because of the presence or absence of diarrhea or steatorrhea, there was significantly less Vitamin B-12 excretion in those without retinopathy as compared to those with retinopathy and normal controls. Also, 6 diabetics without retinopathy had a reciprocal elevation in fecal excretion of

Vitamin B-12, and, in the group in general, there was no improvement in absorption after combining intrinsic factor. This raises the possibility of an absorptive defect, to at least Vitamin B-12, in many diabetics, not just those with steatorrhea. Of course, this test is dependent upon many factors, such as metabolism in the body and excretion by the kidney, and must be interpreted in that light.

Exocrine pancreatic function, as measured by the response to secretin stimulation, has been determined by Aktan and Klotz[7] in a group of 9 diabetics, three of whom had diarrhea and 6 of whom had normal bowel function. All gave a normal response — that is, volume of pancreatic juice increased to greater than 2 cc. per kilogram and bicarbonate concentration was greater than 90 meq. per liter, after the injection of 1 unit of secretin per kilogram of body weight. A single case of diabetes mellitus secondary to chronic relapsing pancreatitis was included and, as would be expected, the results were abnormal. There were also two cases of diarrhea and steatorrhea, both of whom had normal secretin tests. Contrary to this there is a report[10] of pancreozymin-secretin tests in 70 diabetics and 40 normal controls. Many of these were abnormal but the data are only in abstract form, hence firm conclusions cannot be drawn. The problem of whether or not external pancreatic secretion is normal in diabetes therefore remains open.

Stomach

Asymptomatic gastric retention or gastroparesis diabeticorum was found in 6 cases studied by Kassander.[11] If marked, this would appear to me to pose a particularly difficult problem in regulating diabetics for here the ingested food might spend many hours in the gastric pouch prior to reaching the absorptive surface in the small bowel. This could then lead to irregular absorption and predispose to attacks of hypoglycemia.

In the cases reported there was a normal small bowel pattern, a patulous pylorus, and gastric contents could be expressed easily by hand into the duodenum. All efforts at treatment were unsuccessful. The studies of Dotevall[12] on the rate of gastric emptying in diabetics with late complications, as measured by various saline and acid test meals, have confirmed the delay as pointed out by Kassander,[11] who used barium meals with x-rays in his studies.

It has been said that peptic ulcer is less common in diabetics than in the general population. In a study of 1,218 diabetics,[12] 22 were found to have peptic ulcer, 9 of which were duodenal and 13 gastric. On a statistical basis, the authors would have expected 46 or about twice as many ulcers, most of which would have been duodenal. Gastric secretion of hydrochloric acid, both basal and after maximal stimulation with histamine, was lower in diabetics than in control cases. In fact, 17 per cent of patients examined with maximal histamine stimulation had achlorhydria. Biopsy of the gastric mucosa in these patients showed varying degrees of atrophic gastritis with considerable reduction or total absence of glandular elements. Biopsy of patients with normal hydrochloric acid secretion showed no histopathological signs of glandular atrophy.

Uropepsin values are sometimes looked upon as a measure of gastric secretion of pepsin. In Dotevall's series a majority of patients with achlorhydria had low levels while values were not reduced in cases with low or normal secretion of hydrochloric acid. This is in contrast to the report of Grayzel, et al.,[13] who studied 74 juvenile diabetics, without regard to gastric secretion of hydrochloric acid, and found that twenty-four hour uropepsin values were significantly higher in diabetics than in comparable normal individuals. The incidence of higher excretion of uropepsin increased with the duration of the diabetes.

These findings of gastric secretion and glandular atrophy are interesting in view of the report of Sundberg and Gronberg.[14] These authors found 21 bona fide cases of diabetes mellitus in a series of 314 cases of pernicious anemia. No firm conclusion

was drawn other than the frequency with which the two diseases co-existed (6.7 per cent).

Carcinoma of the Pancreas

Carcinoma of the pancreas and diabetes mellitus frequently co-exist. Although patients with diabetes mellitus probably do not have a higher incidence of cancer than that of the average population, it should be pointed out that the diabetic may be more likely to develop carcinoma of the pancreas than is the non-diabetic. Also, it has been emphasized[15] that the development of an abnormal glucose tolerance test in the thin, middle aged or elderly individual without a family history of diabetes should make one suspicious of the presence of carcinoma of the pancreas. Likewise, in the long standing diabetic who loses weight and goes progressively down hill in spite of adequate regulation, the possibility of carcinoma of the pancreas should be entertained.

Why patients with carcinoma of the pancreas should develop diabetes mellitus with unusual frequency is incompletely explained. Postmortem studies often do not reveal actual destruction of islet tissue sufficiently pronounced to account for the presence of diabetes mellitus. Very often the tumor is largely confined to the head of the pancreas and much of the islet tissue is in the body and tail. It is said that at least 90% of the pancreas must be removed to produce experimental diabetes mellitus. Ductal obstruction by the tumor may be important but the separate blood supply of the islets may provide protection.

A recent development in the laboratory is of some interest.[16] One inbred strain of Chinese hamsters has been found with an incidence of diabetes mellitus of 65 to 90 per cent. This is ordinarily a rare disease to occur spontaneously in rodents. Similarly, adenocarcinoma of the pancreas is rare in laboratory rodents. In the course of an experiment, a compound, 3, 4, benzopyrene was applied to the skin of three animals. One of these developed an adenocarcinoma of the pancreas and another a pancreatic adenoma. The unusual occurrence of this rare tumor of laboratory rodents in a diabetic line of Chinese hamsters opens a new approach to the study of the statistical association of diabetes mellitus and carcinoma of the pancreas.

In the human, it is well known that the finding of an abnormal glucose tolerance test may lend support to a clinical diagnosis of carcinoma of the pancreas. Recently, Berkowitz and colleagues[17] have extended this and have reported on the value of the intravenous Tolbutamide test to supplement the glucose tolerance test as a diagnostic procedure. Of 18 proven cases of carcinoma of the pancreas tested, 11 or 61 per cent had abnormal glucose tolerance and 13 or 72 per cent had abnormal Tolbutamide tests. In only 5 cases were both tests abnormal. Hence, it would appear that this may be a valuable supplement to what are, at present, inadequate procedures for the early diagnosis of carcinoma of the pancreas.

Liver

The liver may be enlarged in uncontrolled diabetes.[18] It frequently shows fatty metamorphosis, especially in children. These fatty deposits may disappear completely and the size of the liver lessen when the diabetes is controlled adequately.[19] It has been said that the most characteristic lesion of the liver in diabetics, although non-specific, is glycogen in the nuclei of the hepatic cells in the form of large vacuoles. Also, in the uncontrolled diabetic, glycogen may disappear from the cytoplasm of liver cells while the nuclei become more engorged with glycogen.

Cirrhosis is an uncommon complication of diabetes mellitus, and if present, should be explained by other causes. Fatty liver may occur with acidosis but in the controlled diabetic it is no more common than in the general population.

Other

Brief mention may be made of several other interesting problems. First, it will be recalled that it is not rare to find dark

gastric aspirate containing old blood in cases of diabetic coma. This is thought to be due to diffuse oozing of blood from the gastric mucous membrane, a single bleeding point usually not being responsible. That this bleeding may at times be massive is emphasized by Hirsch[20] who has reported a case of gastrointestinal bleeding occurring during and shortly after diabetic coma which necessitated subtotal gastrectomy. The resected specimen showed thickening of the mucosal folds and dilatation of submucosal capillaries without a single focal bleeding point.

Although I have never seen such a case, it is reported[21] that diabetic coma may occur during the course of an acute pancreatitis. It is suggested that acute edematous pancreatitis is the result rather than the cause of the diabetic coma. Several features are presented to help distinguish this combination from the usual case of diabetic coma. These are rapid fall in blood sugar levels, elevated serum amylase, severe degree of prostration, failure to improve despite rehydration and insulin therapy, abdominal pain, tenderness, or spasm, and sweating.

Summary

A number of gastrointestinal symptoms and signs peculiar to diabetics has been presented. These are of importance not only because they are troublesome but also because they may make proper control of the diabetes difficult. Some may be lethal, such as carcinoma, and others, such as diarrhea, simply complicate the management of the case.

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Management of Occlusive Vascular Disease In the Diabetic*

• What is to be done with the diabetic patient who is under medical management, but who presents vascular disease not amenable to medical means?

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The Problem

BECAUSE of insulin and antibiotics, patients with diabetes seldom die now from acidosis or infection, but 3 of 4 diabetics still die of vascular complications.[1] In fact, the incidence of vascular complications appears to be increasing.[2] Diabetes seems to erase the protection against vascular disease ordinarily enjoyed by women, so that vascular complications occur as frequently in them as in men.[3] This is in contrast to an incidence approximately five times greater among non-diabetic male patients. The vessels of almost any organ can show changes, including the matrix of the nail and the skin,[4] the conjunctiva,[5] and the placenta.[6] The sequelae of greatest clinical significance, however, result from involvement of the retina, kidneys, heart and extremities. Cerebrovascular complications are no more often a cause of death in diabetics than in others.[7, 8] Retinal ("diabetic retinopathy") and renal ("intercapillary glomerulosclerosis of Kimmelsteil and Wilson") angiopathies occur so frequently that it is believed that these will develop in every diabetic, particularly the younger ones, within twenty years.[9] Hypertension is twice as common in the diabetic.[7] Myocardial infarction is two[7, 10] to four[11] times more common in the diabetic and as much as ten times more common in patients younger than 40 years of age;[12] however, the incidence may not be increased in the absence of hypertension.[7] Occlusive disease involving the lower extremities is eleven times more common in the diabetic than in the non-diabetic.[3] It also more commonly involves the upper extremities but is seldom of clinical significance here. Gangrene is forty times more common in the diabetic, and one-half of males and two-thirds of females with gangrene have diabetes.[2] Kramer,[13] who reviewed 3800 consecutive cases of diabetes, reported the following incidences of vascular complications in the leg: 42 per cent impaired circulation, 5 per cent threatened gangrene, and 7 per cent frank gangrene. Within two years after gangrene develops, at least 25 per cent of these patients are dead,[14] in 50 per cent trouble develops in the opposite leg,[15] and at the end of five years only 25 per cent are still living.[14]

The duration of diabetes has direct influence on the development of vascular complications,[4, 8, 9, 16, 17] but it is difficult to eliminate the influence of aging. Also, in 20 per cent of diabetics lesions will develop in the foot before the diabetes is recognized.[15] Vascular complications are apparently not influenced by the severity of the diabetes,[9, 15, 18] but it is difficult to evaluate this factor when the disease is being modified by treatment. Some[17, 19] believed that the incidence of vascular complications is greater among the patients with mild diabetes. Control of the diabetes helps, but it is not generally accepted that this can prevent vascular complications, especially in juvenile diabetics.[16]

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Pathology

The vascular lesions in the retina and kidney of patients with diabetes are known to be characteristic of this disease. It has been generally implied that the occlusive vascular disease involving the extremities is a form of arteriosclerosis, beginning at an earlier age and progressing to a more severe stage, for the clinical manifestations of arterial insufficiency seem to be more severe in patients with diabetes. However, evidence has been slowly accumulating which suggests that even the vascular changes here may represent something different or at least in addition to arteriosclerosis as we generally recognize it. These studies have been of a physiologic, radiologic, histologic and biochemical nature. Skin thermometry[20, 21] and digital plethysmography[22-24] indicate decreased circulation through the peripheral vessels in diabetic patients at a time when there is no clinical evidence of vascular disease. Roentgenograms of young diabetic patients often show extensive calcification in the pedal arteries at a time when there is little or no calcification in the aorta.[25] In the older patients, however, there is as much aortic calcification in the non-diabetics as in the diabetics. Arteriography has demonstrated that there is more distal occlusive disease in the diabetic, compared with the non-diabetic.[26] Goldenberg and associates,[27] examining amputated extremities of diabetic patients, found characteristic lesions in the small arteries and arterioles which were distinct from arteriosclerosis. Such lesions are characterized by endothelial proliferation and deposition of material which takes a positive periodic acid-Schiff stain and a negative colloidal-iron stain. These changes are present not only in the small arteries and arterioles of skin, muscles and nerves, but also in the vasa vasorum and peri-adventitial vessels of the larger arteries. They are present in both hypertensive and normotensive diabetics. Several biochemical studies have shown a chemical difference between similar arteries in diabetics and non-diabetics.[28, 29] The evidence suggests, therefore, that even in the vessels in the extremity the vascular changes may be more characteristic of diabetes than of arteriosclerosis. It does not eliminate the possibility that diabetes may also accelerate the arteriosclerotic process; however, the role diabetes does play in the pathogenesis of arteriosclerosis is still not clear.

It is theoretically reasonable to suppose that this arterial disease would develop at an earlier age in patients with diabetes because the following factors would favor it: (1) the associated metabolic disturbances, particularly in the uncontrolled diabetic, (2) impaired nutrition of the arterial wall due to occlusion of the vasa vasorum, and (3) the stressful state associated with diabetes.[30] For the changes in the biochemical substances in the blood, including cholesterol, muco-polysaccharides, glucosamine, phospholipids, fatty acids and lipoproteins, the reader is referred to reviews of this subject.[31-34] It has been concluded that an elevated blood sugar level is not harmful in itself, but fluctuations in it may be.[35, 36] As a possible mechanism through which diabetes can influence atherosclerosis an attractive hypothesis is that impaired utilization of carbohydrate in diabetics causes increased utilization of body fat, which is the equivalent of a diet high in saturated animal fat but deficient in essential unsaturated fatty acids.[37] There is considerable evidence that this type of diet can increase coagulation of the blood and formation of atheromas. The arteriosclerosis seen in diabetics is not qualitatively different, and there is no agreement as to whether there is a quantitative difference. We are left with the concept that most diabetics have two vascular diseases — an angiopathy, which is secondary to diabetes, and arteriosclerosis, which may or may not be related to the diabetes, but which is at least influenced to the extent that the diabetic angiopathy decreases the effective "run-off" and collateral circulation.

Management

The management of these patients must be individualized. For instance, the arteri-

al insufficiency may be no greater than that which will produce a cool foot, or it may be enough to produce extensive gangrene. There is something different about the "diabetic foot" as compared with the foot seen in other forms of arterial insufficiency. This difference is, of course, due to the frequent presence in the diabetic of complications other than occlusive vascular disease, such as neuropathy and infection. It is important that the existence of these be recognized, for all that looks like arterial insufficiency may not be arterial insufficiency. Pain may be the result not of ischemia, but rather of infection or neuropathy. Pain in the presence of good pedal pulses is unlikely to be due to ischemia. Conversely, pain due to real ischemia can be dulled by the nerve dysfunction. Gangrene is also not an absolute sign of severe arterial insufficiency, for it can result from infection or pressure necrosis secondary to neuropathy. Actually, the symptom complex of the "diabetic foot" is usually the result of a combination of vascular and neurotrophic complications with frequently superimposed infection.

Because of the problems involved, treatment must be planned in a logical fashion. To this end regulation of the diabetes, control of infection, recognition of neuropathy, improvement of the circulation and removal of dead tissue will be discussed.

Regulation of Diabetes

Undoubtedly, good diabetic control will prolong life by decreasing acidosis and controlling infection. Some question exists whether it could influence development of vascular complications,[16] but the consensus is that excellent control will delay and perhaps prevent them. Ditzel and coworkers[5] found the changes in the conjunctival vessels to be reversible in the early stages. Vascular collapse, whether the result of keto-acidosis from undertreatment or hypoglycemia from overtreatment, is to be especially avoided in these patients with vascular complications. Reduction in weight of the obese diabetic is undoubtedly helpful, but there is a real danger of precipitating serious vascular complications. Beckett and Lewis[37] reported 24 such cases and suggested that this was the result of mobilizing endogenous saturated fatty acids. Reduction, therefore, should not be fast and possibly the essential unsaturated fatty acids should be added to the diet at this time. Of interest in relation to the management of diabetic vascular complications are the recent observations that insulin causes a transient (a few hours) decrease in the fibrinolytic activity of the blood[38] and may cause muscular vasodilatation.[39]

Control of Infection

The dryness and cracking of the skin, the relative lack of protective sensation, the high level of tissue carbohydrate, and the poor blood supply combine to make diabetics more prone to infection. In order to prevent infection, the skin should be kept clean and soft, corns and calluses should be meticulously treated, and injury should be avoided. Small superficial infections, particularly epidermophytosis, should be treated early. Any diabetic with an ulcer should be given antibiotics prophylactically. If the infection is severe enough to cause cellulitis or abscess, bed rest, adequate debridement and drainage, administration of the appropriate antibiotic (determined by culture sensitivity studies), and tepid soaks are indicated. Because of the likelihood of arterial insufficiency, direct heat to the area must be avoided. If the infection is severe enough to cause toxicity and preclude control of the diabetes, the extremity should be packed in ice; this should be continued until guillotine amputation can be performed; it serves as part of the anesthesia for the operation.

Recognition of Neuropathy

It is important to recognize neuropathy not because its treatment is gratifying, although control of the diabetic state and administration of vitamin B do help, but because much of the destruction of tissue may be secondary to this, rather than to circulatory ischemia or infection. Destruction of bone, for instance, is usually

secondary to neuropathy. In fact, the prognosis should be better when soft tissue necrosis is associated with destruction of bone, because in order for rarefaction, lysis and resorption of bone to occur, blood must be flowing through it.[40] In the presence of neurotrophic lesions, healing may follow rest and selective use of orthopedic appliances which prevent weight bearing, but sometimes excision of the ulcer and bony prominences is necessary. Vascular complications and neuropathy are found with increased incidence in the presence of one or the other, and this is to be expected, since most cases of neuropathy may be the result of occlusive disease involving the vasa vasorum.[1]

Improvement of Circulation

It is fortunate, perhaps, that all that appears to be arterial insufficiency is not vascular disease, because in general diabetics represent the one group of patients for whom often little can be done to improve the circulation. However, one should never assume that this is the case when *bona fide* occlusive vascular disease exists, and all modalities of treatment should be given consideration. The more conservative measures to be recommended include elevation of the head of the bed four to six inches above the level of the foot if there is no evidence of distended veins with the legs on a horizontal level. This maneuver alone sometimes produces relief from ischemic pain at night. Buerger's exercises may produce additional benefit. Whiskey is still the best vasodilator known. Perhaps heparin is of value in this respect, because Jolly[41] reported a case of a diabetic whose pedal pulse was obtainable only during intermittent injections of heparin. In the long-term management of these patients, smoking should be discontinued, and an effort should be made to decrease the blood cholesterol concentration if this is elevated.

What about sympathectomy? Reduced vascular reactivity has been demonstrated even in the diabetic who does not have obvious vascular disease.[20, 22, 24, 42] Many diabetics have such neuropathy that one would assume that they had already undergone autosympathectomy. However, in diabetic neuropathy not all nerves show equal improvement, many being spared any degeneration. Recently, at our Clinic, we have been performing sweat tests to select the patients who might still have some sympathetic tone. By this means one might be able to avoid unhelpful operations. In most diabetics sympathetic activity is decreased, but if the situation warrants it, sympathectomy should probably be done even if the chance of improvement is minimal. Sometimes, without showing any change in the circulatory status, patients get some relief from pain. Kirtley and associates,[43] in reviewing a large number of consecutive sympathectomies for peripheral occlusive disease, found that one-third of the patients were diabetics, but that only one-third of the unsatisfactory results were in this group; this indicates that one might expect as good a result from sympathectomy in the diabetic as in the non-diabetic. I do not believe this is true, however.

What about reconstructive surgical treatment? Again, diabetics as a rule are not the best candidates because of the frequency of disease in the distal, small vessels. Wheelock[14] found that 40 per cent of diabetics with gangrene had pulsatile circulation through the popliteal artery. Of the other 60 per cent, only one-half had localized obstruction with adequate vascular "run-off" to permit consideration of reconstructive surgical correction. One must not lose sight of the fact, however, that just because a patient is a diabetic does not preclude his having significant arteriosclerotic occlusive vascular disease involving larger vessels that can be attacked surgically. Because of this, I believe that in *every* patient with occlusive vascular disease complete arteriographic visualization from the abdominal aorta to below the knee is indicated. This can be done by translumbar aortography with a single injection of contrast medium. It is well to remember that a femoral pulse does not rule out the existence of

even complete occlusion in the vessels above this point. If an aortic-iliac block is demonstrated and the patient is considered a good operative risk, endarterectomy is the treatment of choice; but if the obstruction is extensive, aortic-external iliac artery (sometimes femoral artery) bypass graft using a synthetic prosthesis should be done. Bilateral lumbar sympathectomy should always be part of this operation. However, only sympathectomy should be done if the patient is considered a poor operative risk, as many of these diabetics are. If occlusive arterial disease is demonstrated in the legs, only lumbar sympathectomy is indicated for the treatment of it, assuming a sweat test has shown sympathetic activity, in the following situations: (1) associated with aortic-iliac arterial reconstruction in the absence of severe ischemia in the legs (Sometimes it is safer to stage the surgical procedures and correct the superficial femoral obstruction at a second operation), (2) poor distal "run-off" beyond the level of the obstruction in the femoral artery, (3) mild claudication as the only symptom, and (4) mild cutaneous ischemia with evidence of good sympathetic vascular tone. For the same situation, that is, occlusive arterial disease in the legs, thrombo-endarterectomy with venous patch graft or saphenous vein bypass is indicated when there is good peripheral "run-off" (open popliteal and at least one tibial artery) for (1) severe claudication that is an economic handicap to the patient and (2) severe ischemic changes.

Removal of Dead Tissue

Obviously, in some patients amputation will be necessary. In fact, the only advantage diabetics have over other patients with peripheral vascular occlusive disease is that they can often have a conservative amputation, since the gangrene is usually the result of neuropathy and infection rather than vascular insufficiency. In 70 per cent of diabetics the gangrene is restricted to toes or patchy areas of the foot, and 35 per cent of the patients have palpable pedal pulses.[27] Limited amputation, such as a toe (plus metatarsal head) only, transmetatarsal or Syme amputation, should be considered when the following criteria are present: (1) the gangrene or infection is distal to the proposed site and stable—this may take as long as three weeks, and (2) there must be evidence of adequate circulation at the proposed level of amputation as indicated by (a) pulse to the popliteal artery or below, (b) lack of rubor at the proposed site of amputation on dependency of leg, (c) lack of ischemic pain at the site of proposed amputation, (d) adequate venous filling (less than 25 seconds) with dependency of the leg, and (e) bleeding at time of amputation. If these are observed, the incidence of long-term success should be at least 70 per cent.[14] Of course, occasionally, reconstructive surgical correction at a higher level will make such a conservative amputation possible when it would not otherwise have been so. Unless all the foregoing criteria are met, one must do a higher amputation—below the knee if the popliteal artery is open or above the knee if it is not.

Conclusions

Occlusive vascular disease is a common, often formidable complication of diabetes. It may be a specific form of disease involving primarily the smaller arteries and arterioles, but often it complicates the usual types of arteriosclerosis. In its management, it is important to recognize the role played by neuropathy and infection. Treatment is sometimes discouraging, but no physician should assume that nothing can be done without proper investigation to prove it. In general, one should be as conservative as possible.

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The Treatment of Trichomonas With Flagyl, A New Oral Synthetic*

• The results of treatment of 108 cases of trichomoniasis with this new oral synthetic drug were reported at the meeting of the Medical Staff of the Southern Baptist Hospital on July 24, 1962.

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THE importance of Trichomonas vaginalis in the gynecologist's practice is illustrated by the fact that approximately 20 to 40 per cent of women[1, 2] are infested, as shown on repeated wet mounts. It is particularly prevalent in the childbearing age and almost exclusively seen in the nonvirgin. It has more and more been considered to be a "venereal disease"[3] with an increased incidence among the sexually promiscuous. If the husband of a patient with trichomoniasis is examined carefully, infection is almost invariably found. These are some of the factors which illustrate the sexual or venereal viewpoint of trichomoniasis. The idea of this being a contamination from the rectum has largely been discarded.

Etiology

There is another side of the picture—that Trichomonas vaginalis is inherently an inoffensive parasite[4] which, even when several million are introduced into the healthy, normal vagina, no vaginitis or infestation with the flagellate occurs. However, when vaginal mucosa and secretions are of an abnormal character, or when glycogen is decreased as possibly in hypoestrogenism or hypothyroidism or possibly hypovitaminosis, T.V. finds an ideal medium. Probably there is yet much to be found concerning the lactic acid and hormone balance of the vagina. According to this line of logic, the preferred treatment of Trichomonas vaginitis is the treatment of the vaginal physiology through vitamins, calcium, estrogen, thyroid and so forth.

Thirdly, there is the neuropsychiatric point of view. Advocates of this feel that trichomoniasis is truly a psychosomatic symptom occurring as a result of changing physiology which in turn is produced by emotional stress. T.V. is the agent, but it alone is incapable of producing symptoms except when the vagina is conditioned by the effects of disturbed emotion.

So, with T.V. as the generally admitted guilty organism, the background etiology according to the three schools of thought, lies somewhere between venereal sex exposure, poor vaginal resistant physiology, and psychosomatics. Here the matter has rested, or, rather, been kicked around. Our own observations and conclusions have been that each of these three considerations has merit. We found the neuropsychiatric theory the most difficult of all to accept and for a long time, though these thoughts had been voiced by such men as Creadick of Duke[5] and Moor and Simpson,[6] we could not agree. However, we have had to admit that in almost every

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case of intractable trichomoniasis, where every means of treatment at hand was exhausted—the troublesome chronic case, in other words—these women had strong neuroses and deepseated conflicts, most of them marital problems. In several cases, however, this in turn introduces the possibility of sexual promiscuity in either husband or wife.

Treatment

In the meantime, the unfortunate patient with trichomoniasis continues to itch, to be plagued by her odorous discharge, to douche, and to treat herself with a wide variety of products, each claiming a higher cure rate than the others, but each falling short of the desired effect. In the last decade and a half we have been through the nitrofurons[7, 8] (powder and suppository), Stovarsol, picric acid, oral aminitrozole, carborsone, arcetosone,[9] polymyxin and terramycin,[10] each under a variety of proprietary names. Many will remember the carlendacide solution from Carlen laboratories, Coconut Grove, Florida. The Trichomonas has been acidified, alkalinized, poisoned, washed out, exploded, ignored, intoxicated, hypnotized, and attacked with ultrasonic sound devices and medicated tampons. It had survived all of these until 1959, when Durel, Roiron, Siboulet, and Borel presented the first paper on the treatment of 19 patients in France[11] by a derivative of nitroimidazole. Twenty-two months later they published the effect of Flagyl, as the new drug is called, on 998 patients, 147[12] by the authors and their associates. The chemical, a simple synthetic substance consisting of pale yellow crystals, readily absorbable from the intestinal tract, is a brand of metronidazole, and is 1-(B-hydroxyethyl)-2 methelnitroimidazole. The trichomonacidal minimal concentration of this substance is 1:400,000 in vitro; and in vivo the standard methods of mice injection have shown it to be highly potent. Acute, subacute, and chronic toxicity studies on animals show an extremely wide margin of safety. Dogs had signs of ataxia, muscle rigidity, tremors and death only on doses more than a hundred times standard therapeutic dose. Reports followed from England (in the *Lancet*,[13] *Brit. Jour. Ven. Dis.*,[14-16] *British Med. J.*[17, 18]) and Canada,[19] and are now appearing in our own medical journals. The results of all are excellent and with a higher cure rate than before reported on any other method.

Flagyl

The product is packaged in a 250 mg. tablet and the most commonly reported dosage so far tried is 250 mgs. twice daily for ten days. It should be given to the husband at the same time that the wife is treated. Vaginal inserts are manufactured but are less effective and probably not necessary as an adjunct to local therapy except in an occasional resistant case. Side effects are minimal and usually insignificant. Gastrointestinal symptoms such as nausea and vomiting or diarrhea have been reported in about 3 per cent, unpleasant taste in 1½ per cent, vaginal dryness and burning in 2 per cent. We have not encountered the latter. An occasional case of urticaria, headache, and vertigo has been reported.

As this product is nitroimidazole, white blood counts should be watched but no cases have been reported of undue leukopenia.

The Food and Drug Administration has seen fit to be extremely cautious in its allowance of this drug for the open market, although it has been available in most other countries for some time. With documented results now running into tens of thousands, they have held back on its release, though admitting its efficacy and the fact that to date, at least as recently as I am able to find, no more than nuisance side effects have been reported. Their reasons have been based principally on the potentialities of side effects due to the action of similar chemical formulae. However, on reading the repeated appeals of G. D. Searle Company, the American manufacturers, to the Food and Drug Administration, pointing out reports on 7,000 cases by 500 physicians in this coun-

try with trials not completely reported on 30,000 more, together with the clinical experiences in France, Great Britain and Canada, one is impressed that there has been no single instance of serious toxic effects of Flagyl reported to them, even when attention of these physicians has been specifically directed to the possibility of blood dyscrasia and central nervous system reaction to it.

Material

We were pleased to be among those who were allowed sampling of this drug for clinical investigation. Our own experiences with those of Doctors Beacham and Webster consists of 108 cases treated within the past year plus nearly 100 husbands. We tried to select those patients for treatment who had long histories of trichomoniasis with repeated treatment and who still showed subjective symptoms and demonstrable active flagellates on wet mounts. Some "first-timers" were included in this series. The patients were divided almost equally between those in their 30's, 40's, and 50's, with only a few teens and a few over 50. There was one 70 years old. Our treatment for the most part was one tablet orally twice a day for ten days. If married, we asked that the husband take a similar dosage. Eighty-nine cases, or 82 per cent were cured by one course of treatment as far as our present follow-ups are concerned. Eleven were not followed up and have not been rechecked since their medication, leaving 8 patients not cured by their first course. Of the 8 recurrences, 4 were in the Beacham-Beacham-Webster group and 4 in the Ward-Dampeer-Davis group. Analysis of the former 4 cases revealed three whose husbands were not treated and 1 unmarried and rather evidently promiscuous woman.

Of the 4 failures in the Ward-Dampeer-Davis series, 1 was a virgin who recurred in four weeks, but has been repeatedly negative since a second oral course of tablets. The second was a severe, longstanding, recurrent Trichomonas case who recurred in two months; we doubt that her husband cooperated in taking the medication but she has been negative since a second course. The third is a divorcee, admittedly promiscuous, who refused to have her consort take the pills, has not been checked since her repeat course of tablets. And finally, there is a patient with a severe necrotic type longstanding discharge whom, I am sure, cooperated in every way but recurred and has left town after her repeat course.

Our recurrences make us more strongly convinced than ever of the venereal relationship behind the presence of Trichomonas with its passage back and forth between sexual partners. You will note of the 8 cases who had to be re-treated, 7 did not, or probably did not, have their sexual partner simultaneously take the medication, whereas in the vast majority of the 89 out of 97 who were followed up and cured by the first treatment, the husband did take the medication.

Thirteen of our combined series of 108 were treated during pregnancy; all of these were cured on follow-up to date.

Of side effects—all were mild. There were five persons who stated that they had nausea to some degree; some only a day or two, some throughout the ten days of treatment. Three stated they had bad, bitter, or brassy taste. One complained of slight edema and one of slight weakness, one of dizziness. None stopped the medication because of side effects.

The testimonials of some of the patients were interesting. Besides the almost invariable and immediate response that their discharge had stopped or changed its character significantly, the odor having vanished and the itching ceased, we heard: "Wonderful relief", "All discharge was gone on the second day of treatment and no trouble since", "I no longer have to change pants 2 or 3 times a day", "After the first day all discharge and itching had stopped", "Good to have clean dry pants again", and so forth.

The oral treatment is especially advantageous in treating the virginal woman as no vaginal insertion or douche is required.

We were impressed with how often other pelvic symptoms such as an unexplained low abdominal pain, bearing down feeling, or feeling of everything falling out were relieved coincidentally. Though blood counts and urinalyses were run on the majority of these before and after treatment, not one showed an adverse effect on these tests.

We were also impressed with the large number of cases who, when all evidence of trichomoniasis was gone, with the wet mounts free of the flagellates and the character of the discharge changed, still had a mild to moderate vaginitis. These often showed yeast or *Haemophilus vaginalis* or simply mild irritation with increased pus cells. This strengthens the theory that Trichomonas most often occurs in poor vaginal physiology.

Summary

Flagyl, a brand of metronidazole, has been found effective as an oral treatment of Trichomonas vaginalis vaginitis. In 108 cases, 82 per cent were cured on the first course of therapy. Eleven were not followed. Among 8 failures, the majority did not have their consorts simultaneously treated, but most of these were cured on re-treatment.

An additional advantage of this product is the simplicity of treatment — by oral tablet alone.

No significant side effects have been reported in the literature nor were any noted in our series.

Addendum

Since this paper was presented, we have treated an additional 48 cases with excellent results. One of us (W.D.B.) is insistent upon having the husband examined.

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Controlled Clinical Studies on the Anabolic Effects of Nandrolone Phenpropionate In a Variety of Debilitating Conditions

• The effects of Durabolin on thirty-six patients were studied.

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THE value of testosterone and its derivatives in promoting protein synthesis has been counterbalanced, until the last decade, by the inherent androgenic properties. Development of 19-nor-testosterone, in 1950, and subsequent modifications of that compound, have permitted the utilization of the important anabolic benefits of androgenic hormones with little risk of masculinization.

An orally-active 19-nor-testosterone derivative, 17-ethyl-17-hydroxynorandrostenolone (Nilevar®) has been widely used in recent years because of its favorable anabolic/androgenic ratio. However, like its forerunner, methyltestosterone, and the other 17 methyl analogues of 19-nortestosterone, norethandrolone has exhibited hepatic toxicity. It is also a potent progestational agent.

Nandrolone phenpropionate (Durabolin®), a new, long-acting parenteral anabolic compound, has proved especially valuable as a stimulant to protein synthesis because of wide separation of anabolic from androgenic qualities and because it has never produced jaundice or other untoward hepatic effects. Lack of effect on liver function is probably due to the fact that nandrolone phenpropionate, unlike oral anabolic steroids, has no methyl or ethyl group in the 17-carbon position.

Overbeek and deVisser[1] first demonstrated the potent and prolonged anabolic activity of nandrolone phenpropionate (at least 10 times more myotrophic than testosterone propionate) by employing the standard levator ani muscle test in castrated male rats. The compound's prolonged action and its anticatabolic effect were demonstrated by the prevention of adrenal atrophy in animals receiving it in conjunction with corticosteroids.

Extensive clinical use of nandrolone phenpropionate for the past five years (in this country and abroad) has supported the experimental pharmacologic findings that it is a powerful anabolic, anti-catabolic agent with little, if any, virilizing action when given in recommended doses. Nitrogen balance studies have further attested to its profound protein-sparing activity.

In recent months, Sobel,[2] Craig,[3] Payne,[4] Hock,[5] and Smith and Johnson,[6] have reported dramatic reversal of various debilitating conditions with a course of Durabolin therapy. Not only was an increase in appetite with corresponding weight gain a common finding, but the authors also noted characteristic elevation of mood and restoration of vitality in the majority of their listless, "under-par" patients.

Moreover, the ability of this anabolic agent to establish and sustain positive nitrogen balance has been as beneficial in certain skeletal disorders as in building muscular tissue. Banghart[7] reported nandrolone phenpropionate markedly increased mobility and reduced pain in osteoporotic patients, probably through fortification of the skeletal protein matrix.

Method

The many published studies of the anabolic benefits of nandrolone phenpropionate in a wide variety of indications

* Clinical Assistant Professor of Medicine, L. S. U. Medical School, New Orleans, La.

prompted the present evaluation. A double-blind study was conducted over a five-month period on 36 patients (19 females, 17 males) from the gastroenterology clinic at Touro Infirmary and from my private practice. Five of those studied were under 40 years of age (two of whom were in their late teens), and the remainder ranged in age from 43 to 88 with an average age of 64. They exhibited a variety of negative, debilitating clinical conditions including hypertrophic rheumatoid arthritis, osteoporosis, peptic ulcer, chronic alcoholism manifested by hypoproteinemia, post-infection debility, peripheral neuritis with myositis and bursitis and arteriosclerotic heart disease.

The patients were divided at random into two groups of 18 each. Each patient in the first group received a 2 cc. intramuscular injection of drug "A" once each week, the others receiving drug "B" with the same dosage schedule. Drug "A" was later identified as Durabolin (nandrolone phenpropionate, 25 mg./cc. in sterile sesame oil) and drug "B" was sterile sesame oil.

The average duration of medication with each agent was nine weeks. One post-pneumonitis patient receiving drug "A", however, was so improved in two weeks (increased appetite, brighter mental outlook, plus a 2 lb. weight gain) that further treatment was considered unnecessary. Another patient discontinued therapy after eight weeks because of a

TABLE 1
TYPE OF IMPROVEMENT

	Drug "A" (Durabolin) (18 patients)			(Drug "B" (Placebo) (18 patients)		
	Marked Improvement	Some Improvement	No Improv.	Marked Improvement	Some Improvement	No Improv.
Digestion	5	9		2	7	
Appetite	6	8		2	7	
Weight	4*	9		1	6	
Mental Symptoms	5**	2			4	
Arthritic Pain	7	4		2	6	
Osteoporotic Pain	6	3		2	2	

* The highest weight gain was 12½ lbs. in 11 weeks in a patient recuperating from spontaneous pneumothorax.
** One patient reported marked euphoria.

TABLE 2
CLINICAL RESULTS

Drug "A" (Durabolin)—18 patients



Marked Improvement (9 patients)



Some Improvement (7 patients)



No Improvement (2 patients)

Drug "B" (Placebo)—18 patients



Marked Improvement (3 patients)



Some Improvement (6 patients)



No Improvement (9 patients)

Two patients receiving the trial drug showed no improvement at all (one had diabetes mellitus, hypertrophic and rheumatoid arthritis with appearance of cystitis during therapy; the other had hypertrophic arthritis, hemorrhoids, cholecystitis and arteriosclerosis). One of these patients, however, reported more severe arthritic pain upon cessation of therapy. Nine patients on placebo did not improve in any way.

flare-up of diabetes mellitus and appearance of cystitis, while a third patient refused further treatment when the medication failed to relieve arthritis pain after five weeks of therapy. Two other patients requested continued treatment for fourteen weeks because they reported feeling so much better during therapy.

Determination of improvement was primarily subjective, although the patients were weighed each week, and in some instances B.U.N. readings were taken. Because 13 of the patients on "A" medication and 12 on the control patients had osteoporosis, osteoarthritis or rheumatoid arthritis, the primary criterion for improvement was relief of pain. The nutritional status of over half the patients was poor, and improvement in appetite and digestive processes was evaluated from their accounts of their eating habits. An attempt was also made to evaluate improvement in mental symptoms in the older patients who exhibited mental deterioration in varying degrees.

Results

Side effects noted during the course of "A" medication (Durabolin) were: headache, 2 patients; epididymitis, 1, increased nervousness, 1. The side effects reported by patients on "B" medication (placebo) were: headache, 1; pruritis, 1; increase in libido, 1; dermatitis, 1; dizziness, 1. Another placebo patient, a paranoid schizophrenic, suffered an acute paranoid attack with hallucinations during the treatment period. No edema or evidence of hirsutism or other androgenic activity was observed in any patient.

In this study the most noticeable benefit of anabolic therapy was relief of pain, reported by all but two of the "A" (Durabolin) drug patients with arthritis or osteoporosis. Equally gratifying was the increased appetite and enhanced digestive ability in patients convalescing from infectious diseases. The average length of treatment before onset of improvement was 12.6 days on "A" medication and 19.6 on "B" medication. I also think it pertinent to mention that there was no significant change in B.U.N. retention with either agent.

Conclusion

On the basis of this double-blind study, anabolic therapy with Durabolin (nandrolone phenpropionate) has proved effective in increasing appetite and weight in debilitated, poorly nourished patients, and has a decided palliative effect on arthritic and osteoporotic pain. No evidence of edema or virilizing activity was noted, and side effects were of a mild and transitory nature. The results confirm those of other investigators using nandrolone phenpropionate over similar periods of time and earlier findings in my own practice.

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The Trademark of Quality

Most of us physicians learn to respect the competence of a particular pharmaceutical house. Their trademark becomes a sign of quality to us and I hope we don't do away with what seems to me the consumers' best guarantee of value—the identification with a particular drug house.—William C. Menninger, M. D., to Senate Subcommittee on Antitrust and Monopoly.

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Editorial

Diabetic Nephropathy

Diabetes mellitus is a disorder of metabolism. As such it affects all organs and tissues. The physician, in considering what it does, tends to think both of its acute manifestations, which may lead to diabetic coma, and of its chronic degenerative changes, which are manifest in the circulatory system and in the kidney.

Diabetic Nephropathy is the title of a clinical and pathological study based on renal biopsies by Gellman et als.[1] which is invaluable and informative to both the clinician and the pathologist. A detailed investigation of 53 patients with diabetes provided an adequate description of the tissue changes and a clarifying correlation between some of the changes and the clinical findings of the patients. Descriptions were given of the glomerular lesions and the tubular lesions. The glomeruli were found to be entirely normal in only 25 per cent of biopsies.

The lesions described are several. Of importance was the nodular diabetic glomerulosclerosis first described by Kimmelstiel and Wilson. These were found in 30 of 53 biopsy specimens and in 8 of 9 autopsy specimens. This lesion was regarded by the authors, using strict diagnostic criteria, as diagnostic of diabetes. The nodule is an eosinophilic structure occurring at the periphery of the glomerulus and when small was surrounded by a small dilated capillary. Material is deposited in the inner aspect of the capillary loop, away from Bowman's capsule and the first deposition occurs in the endothelial cells. It is not regarded as intercapillary as the lesion was described by previous workers. The nodules may be single or multiple, varying according to the degree of advancement of the condition.

Another lesion is diffuse diabetic glomerulosclerosis. It was found in 47 biopsies and in all the autopsies. It was characterized by the presence of abnor-

mal material in the capillary walls which were thickened, and in the fully developed lesion the complete circumference of the capillary wall was involved. It seemed probable that in this diffuse glomerulosclerosis the basement membrane was the first structure to be affected. Many glomeruli showing this lesion also showed the nodular diabetic glomerulosclerosis, but the nodular type was not seen in the absence of the diffuse type. With these lesions, the glomerulus appeared to be enlarged.

A third lesion noted was the exudative lesion found largely as an intensely eosinophilic concentric cap around part of the periphery of the capillary loops. It was the least common and the least specific of the changes. Additionally, capillary aneurysms were found; capsular adhesions were frequent; lipophages, which are large vacuolated cells containing fat, were found in one third of the specimens. Pericapsular fibrosis which was described as a fibrous tissue frequently seen around Bowman's capsule, was present roughly in proportion to the severity of the glomerulosclerosis. With increasing severity in both nodular and diffuse glomerulosclerosis, the glomeruli became increasingly ischemic and eventually became completely hyalinized.

Among tubular lesions, some degree of atrophy was seen in 75 per cent of biopsies. They appeared to be a sequel to glomerular damage. Dilatation was seen less often. Peritubular hyaline cuffs were seen in 42 biopsies and in all the autopsies. This was described as eosinophilic material surrounding portions of tubules. Vascular lesions of the glomerular arterioles were found in 83 per cent of biopsies and were seen in greater proportion than that in other renal biopsies. Arteriolar damage increased in proportion to the glomerular lesions.

Interstitial tissue fibrosis was found in a high proportion of cases which was 82 per cent of all biopsies. Edema was found only in 10 biopsies; 7 of these were from patients with the nephrotic syndrome. Although particular attention was paid to the diagnosis of pyelonephritis, a definite diagnosis of chronic pyelonephritis could not be made following the classical criteria of Weiss and Parker.

The relationship between the histological lesions was that they were in general of comparable severity. The exception to this was the relationship between the "nodular" and the "diffuse." Moderate to severe diffuse glomerulosclerosis was seen in some specimens in which no nodules were found. The exudative lesions were in the more severely damaged kidneys. Patients with nodular glomerulosclerosis had had diabetes for a significantly longer time than those without nodules. Diffuse diabetic glomerulosclerosis was related not only to the duration of the diabetes, but also to the age at which it began. There was no correlation between the increasing severity of nodular glomerulosclerosis and the level of the blood pressure. This was in striking contrast to the progressive increase of diastolic blood pressure associated with increasing severity of diffuse diabetic glomerulosclerosis.

The incidence of edema was greater in patients with nodular glomerulosclerosis than in those without, but the difference was barely significant. There was no increase in the incidence of edema as the lesion became more severe. By contrast, as the diffuse lesion became more severe there was a progressive and statistically significant increase in the proportion with edema.

The nephrotic syndrome was present in 14 patients upon whom biopsies were made. These patients had proteinuria, hypoalbuminemia, hypercholesterolemia, and edema. It was found that this syndrome was clearly associated with severe degrees of diffuse glomerulosclerosis but not with the severity of nodular glomerulosclerosis. Relationships between the blood chemistry and clearance tests, and the glomerular lesions are of clinical significance. Increase in serum urea nitrogen was in close correlation with the severity of the diffuse lesion but not with the nodular lesion. The same is true for the serum creatinine. There was no correlation with the severity

of nodular glomerulosclerosis in the serum albumin, but there was a negative correlation with severity of diffuse glomerulosclerosis. Similar findings pertain to the urea clearance and creatinine clearance.

The authors state that while the specificity of diffuse glomerulosclerosis in diabetes is not generally accepted, the authors quote Bell who believed that diffuse glomerulosclerosis can be distinguished from arteriolar nephrosclerosis and they agree with him.

The fundamental cause of the glomerular lesions is not known. The authors feel that the term "Kimmelstiel-Wilson Syndrome" should be abandoned and the eponym reserved for the histological lesion which these authors described. The authors feel that there is no regular association between nodular glomerulosclerosis and the proteinuria - hypertension - renal failure and nephrotic edema of the so-called syndrome. They feel that the severity of the hypertension, proteinuria, and renal failure, the incidence of edema, and the nephrotic syndrome can be correlated mathematically with the severity of diffuse diabetic glomerulosclerosis.

In summary, it is clear that the presence of nodular glomerulosclerosis was associated with abnormal findings in each test; but there was no tendency for the test to become increasingly abnormal as nodular glomerulosclerosis became more severe. The incidence of severity did increase with the diffuse diabetic glomerulosclerosis. This detailed study clarifies the relationship between renal lesions and the clinical manifestations of diabetes, and reserves "Kimmelstiel-Wilson lesion" as a finding in the glomerulus, not accurately related to a clinical syndrome.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

RAW OYSTERS LINKED TO INFECTIOUS HEPATITIS

An outbreak of infectious hepatitis traced to consumption of raw oysters suggests an aid to investigations of the disease, especially where seafood is an accessible item. During the first three months of 1961, 80 cases of infectious hepatitis occurred in Pascagoula, Mississippi and in Mobile and Troy, Alabama. Through the Communicable Disease Center in cooperation with state health departments, four additional cases were identified in residents of New York, New Jersey, and Pennsylvania. These patients had eaten raw oysters in Mobile and Pascagoula around Christmas time. The oysters associated with the epidemic were harvested from heavily contaminated waters at the mouth of the Pascagoula River. The outbreak stresses the need for an adequate program for preventing the sale of shellfish from contaminated waters. (J. O. Mason and W. R. McLean: "Infectious Hepatitis Traced to the Consumption of Raw Oysters," **American Journal of Hygiene**, January 1962).

DISTRIBUTION OF THE MEDICAL DOLLAR 1929, 1950, 1961 $20.8 BILLION SPENT

Americans spent $20.8 billion for medical care in 1961. Of this amount, physicians received one-fourth, or $5.2 billion. Although total spending for medical care climbed 6.4 per cent since 1960, the doctors' share—25 cents of each dollar spent—has remained the same since 1955. While dentists earned 16 cents of every dollar in 1929, their share dropped to 10 cents by 1961. Expenditures for drugs have tended to remain constant, but expenditures for other professional services declined from nearly nine cents in 1929 to about half this amount last year. While the doctors' share of the dollar has declined from about 33 cents in 1929 to 25 cents in 1961, hospitals' share has almost doubled, rising from 14

cents in 1929 to 27 cents last year. (U. S. Department of Commerce, **Survey of Current Business**, July 1962).

LOAN PROGRAMS FOR BETTER HEALTH

Besides the loans available to medical students, interns, and residents through the AMA Education and Research Foundation, other medical scholarship and loan funds are provided by state and county medical societies and their Woman's Auxiliaries. In addition to these medical society programs, a considerable number of states have funds administered by their legislatures, medical schools, private, and public foundations. Students interested in scholarship or loan programs may contact their medical school deans or executive secretaries of state medical associations. (**Medical Scholarship and Loan Fund Programs**, American Medical Association, 535 North Dearborn Street, Chicago 10).

STATEMENT FROM DR. GEORGE M. FISTER, PRESIDENT OF AMERICAN MEDICAL ASSOCIATION

A new survey of the economic condition of American families, made by the University of Michigan Survey Research Center, proves again the injustice of forcing higher payroll taxes on the nation's workers to buy health care for the aged.

The statement was made by Dr. George M. Fister, president of the American Medical Association, in a news release accompanying an evaluation of the Michigan survey.

"Analysis of the survey findings once again demonstrates, as other studies have, that the aged as a group are substantially better off on the average than younger Americans," Dr. Fister said.

"It proves that the proposed program of nationalized health care for the elderly would be an intolerably unfair burden on wage earners by forcing them to pay health-care bills for the aged, the vast majority of whom are well able to take care of themselves."

Dr. Fister said: "The people who are advocating this program—and they include Administration officials, labor leaders and certain political candidates—have painted a dismal picture of the aged as a group living in virtual poverty and needing taxpayers' help in paying their medical bills.

"The truth is a great deal different. As shown by the findings of the University of Michigan survey, aged families, far from destitute and impoverished, actually own considerably more assets and owe fewer debts than younger families. Corresponding evaluation of cash incomes reveals that because of tax exemptions and credits, size of families, and other advantages enjoyed by persons over 65, the gap in income per family member between aged and younger families is relatively small."

Dr. Fister said "the conclusion is irresistible" that the campaign for government controlled health care for the aged "is built on a monstrous fraud."

"The hucksters for this program," he said, "are insisting that the country's younger taxpayers, hard-pressed as many of them are taking care of their own families, should be forced to give up another big slice of their take-home pay to buy hospitalization for a group that is generally better off than they are and doesn't need help."

The AMA president said that while some elderly citizens need help in paying for medical care, the Michigan survey shows that "deprivation and want are not a universal condition of the aged."

Dr. Fister said that "the most striking and most significant disclosure, in view of the agitation for nationalized health care for the elderly, is the fact that 96 per cent of the aged interviewed did not owe a single penny to a hospital, a physician or a dentist."

"Furthermore," he said, "the evidence is overwhelming that paying for medical care is not a pressing problem for the vast majority of Americans, since 90 per cent of families under 65 had no debts to physicians, dentists or hospitals, and only 1 per cent of all families, including those over 65, owed $500 or more to these providers of medical services.

"Part of the answer obviously lies in the spectacular growth of health insurance, which now covers more than 135 million Americans, including more than 9½ million over 65. And those 9½ million elderly represent 68 per cent of everyone over 65 who either needs or wants health insurance.

"It must be concluded that the push for federalized health care for the aged is not just a simple fraud, but what's worse, it's a fraud being perpetrated for political purposes. The aged are being exploited for political power and the taxpayers are being hoodwinked for the same purpose."

Dr. Fister said the survey shows:

1. The median value of total assets owned by families with the head of the family over age 65 was $8,349 in 1960, almost twice as much as the $4,839 which was the median value of total assets of all other age groups as determined by the study. (The term family is substituted for "spending unit," the basis of the study, for greater clarity.)

2. The median value of equity in a home for the over-65 families was $4,559, almost 4½ times as much as the $1,028 reported for younger families.

3. The median value of liquid assets was al-

most 2½ times as great for the over-65 families—$1,012 compared with $460.

4. Sixty-four per cent of the aged families are home owners, and 53 per cent of these own their homes free of mortgage. In contrast, 53 per cent of younger families are home owners and only 18 per cent have no mortgage indebtedness.

5. Sixty-three per cent of over-65 families own assets valued at $5,000 or more compared with 47 per cent of younger families. And 41 per cent of the aged hold assets valued at $10,000 or more, compared with 27 per cent of younger groups, while 18 per cent have assets of $25,000 or more, contrasted with only 9 per cent of younger families.

6. Among aged families, 74 per cent had no personal debt, compared with 34 per cent of younger families, and 86 per cent reported no installment debt, compared with 48 per cent of all other age groups.

Dr. Fister said that "proponents of government controlled medicine try to paint a picture of economic wretchedness as a universal condition of the aged by citing income alone and ignoring the favorable asset and debt position of the aged."

"But using income alone as a test of economic condition," Dr. Fister said, "is misleading when it ignores the substantial tax relief given those over 65 through double income tax exemptions, retirement income credit, full medical expense deductions and exemption of benefits from social security, railroad retirement and other pensions, annuities and dividends, as well as size of family and other factors.

"Median income for families under 65, according to U. S. Census Bureau statistics, was $5,905 in 1960, compared with $2,897 for families over 65.

"But adjustment for tax and other advantages enjoyed by the aged, together with fewer family members and family obligations, reveals that family income per member was only about $248 less for aged families in 1960 than for younger families.

"And when the 524,000 aged families who get medical care under the old age assistance program are removed, the gap is reduced to $148."

Dr. Fister added: "Some aged obviously need help and they should be helped, but it is equally obvious that with private health insurance doing such a remarkable job and the Kerr-Mills Law available for those truly in need, a new back-breaking compulsory tax program to purchase health care for the aged regardless of need is not called for."

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

NEWLY-ELECTED OFFICERS OF THE NEW ORLEANS ACADEMY OF OPHTHALMOLOGY

The newly-elected officers of the New Orleans Academy of Ophthalmology are as follows: Dr. J. Wm. Rosenthal, President; Dr. Shelley R. Gaines, Vice President; Dr. N. Leon Hart, Secretary, and Dr. Edmund L. Leckert, Treasurer.

Mr. Joseph Mizelle has been engaged as Business Manager and General Secretary.

Inquiries should be directed to the new address, 517 Godchaux Building, 527 Canal Street, New Orleans 16, Louisiana.

CURRENT AMA FILM CATALOG NOW AVAILABLE

The 1962 edition of the AMA Medical Health Film Library catalog is now available for distribution by the Medical Motion Pictures and Television Section of the Department of Scientific Assembly. This expanded catalog contains

information about 173 films for professional audiences and 82 films to be used by physicians in addressing lay groups such as PTA, church organizations, service clubs, etc. A description of the content of each film, running time, service charges, and instructions for ordering are included in this catalog. The services of the AMA film library are available to physicians, medical societies, hospitals, medical schools and other medical groups. Copies may be obtained, without charge, by addressing your request to the American Medical Association, Medical Motion Pictures and Television Section, Department of Scientific Assembly, 535 North Dearborn Street, Chicago 10, Illinois.

A.M.A. ANNOUNCES PROGRAM FOR WINTER L.A. MEETING

The 1962 clinical meeting of the American Medical Association will be held November 25-28 at Los Angeles.

An attendance of 12,000 is anticipated, half of them physicians. General arrangements are under the direction of Wilbur Bailey, M. D., past president of the Los Angeles County Medical Association and of the California Medical Society.

The four-day meeting will open at noon Sunday, November 25, and will conclude at 5:30 p.m. Wednesday, November 28. House of Delegates headquarters will be in the Biltmore Hotel.

Scientific sessions, general registration and scientific and industrial exhibits will be in the Shrine Auditorium.

A Sunday afternoon scientific session is scheduled at 2 p.m. in lieu of the customary Thursday morning session held at past clinical meetings.

Serving with Dr. Bailey on the Committee on Arrangements are Lewis T. Bullock, M. D., and Edward H. Crane, Jr., co-chairman of the Committee on Scientific Program; Leonard M. Asher, M. D., Chairman of the Committee on Television; and Allan K. Briney, M. D., Ian MacDonald, M. D., and Reuben Dalbec, secretary.

More than 100 papers will be presented on the scientific program and more than 200 industrial and scientific exhibits will be displayed at the Shrine Auditorium.

The program on viral hepatitis will present the most recent findings in studies of the only infectious disease which has shown an increase in the United States in recent years. Among those reading papers will be Joseph D. Boggs, M. D., of Northwestern University Medical School. Dr. Boggs gave a short paper in June, 1961, at the AMA's annual meeting in New York City, reporting on studies that indicated an approach to developing a hepatitis vaccine.

The aerospace medicine program will feature papers by several physicians who have a leading part in the astronaut program, and also will include presentations by medical directors of an air line and an aircraft manufacturer regarding medical problems encountered in commercial aviation.

Air pollution will be studied from various aspects, with special emphasis on air pollutants that may cause physical ailments that require medical treatment.

Two units of the program will deal entirely with cancer, one on the etiology and pathogenesis of cancer and the other on new developments in chemotherapy for cancer. In addition a number of papers on other aspects of cancer will be presented on several other segments of the program.

Highlights of the program are as follows:

Sunday afternoon—Air pollution and pulmonary disease.

Monday morning—Viral hepatitis; cineradiography; general surgery; clinical nuclear medicine.

Monday afternoon—New approaches to depression and suicide; anesthesiology; thoracic surgery; disturbances of growth in children.

Tuesday morning—Etiology and pathogenesis of cancer; forensic medicine in clinical practice; urology.

Tuesday afternoon—Chemotherapy of cancer; neurosurgical program; gynecological and obstetrical program.

Wednesday morning—Medical management of cardiovascular disease; symposium on dermatologic surgery; viruses.

Wednesday afternoon—Aerospace medicine; orthopedics; ear, nose and throat.

POSTGRADUATE COURSE ORTHOPEDICS IN GENERAL PRACTICE

Diagnosis and conservative treatment of orthopedic disease and injury, primarily in the ambulatory patient, will be the emphasis of the post-graduate course, **Orthopedics in General Practice**, to be held at the Medical College of Georgia, December 4, 5, 6, 1962.

Many everyday problems in general practice involve the musculoskeletal system. Short histories and clinical findings followed by discussion will be presented. The indications for surgery will be stated and problems in both child and adult will be considered. One session will be devoted to impressions and recommendations regarding cases and x-rays submitted by participants of the course.

F. James Funk, Jr., M. D., Orthopedic practice, Associate in Surgery (orthopedic), Emory University School of Medicine, Atlanta, Georgia and C. Roger Sullivan, M. D., Mayo Clinic and Mayo Foundation, Rochester, Minnesota, will be the featured faculty. Coordinators for the course are Floyd E. Bliven, Jr., M. D., Professor of Surgery and Chief of Orthopedics, Medical College

of Georgia; and James W. Harkess, M. D., Associate Professor of Surgery (Orthopedic), Medical College of Georgia. Faculty members of the Medical College of Georgia will participate.

Each course is acceptable for 18 hours credit by the American Academy of General Practice. Registration is limited to a small group for close faculty-participant communication. Registration fee is $50.00. Application can be made by contacting Dr. Claude-Starr Wright, Director, Department of Continuing Education, Medical College of Georgia, Augusta, Georgia.

VISITING PROFESSORSHIP IN SURGERY AT TULANE ANNOUNCED

Announcement of the creation of the Alton Ochsner Visiting Professorship in Surgery at Tulane school of medicine has been made by Dr. M. E. Lapham, dean of the medical school.

The endowed professorship will bring to the medical school each year a distinguished surgeon for a week of conferences, lectures and ward rounds. The first Visiting Professor who will serve during the week of October 29 is Dr. Robert Zollinger, professor and chairman of the department of surgery at Ohio State University.

The Visiting Professorship has been made possible by the Alton Ochsner Surgical Society, the organization of former Tulane residents and fellows of Dr. Ochsner, who served for 29 years as professor and chairman of the department of surgery.

Dr. Oscar Creech, Jr., the present professor of surgery at Tulane, said that the Visiting Professorship will be an annual event.

PEDIATRIC COLLOQUY

The fourth annual Pediatric Colloquy will be held November 16-17 at the Hillcrest Medical Center and Tulsa Psychiatric Foundation, Tulsa, Oklahoma. Theme of the program is "Problems of the Urogenital System" and physicians in the fields of pediatrics, general practice and urology are being invited.

SYMPOSIA
PEDIATRIC CARDIOLOGY AND ADULT CARDIOVASCULAR RENAL DISEASE

The above symposia will be held on Friday, November 9, 1962 and Saturday, November 10, 1962 at the Capitol House and Baton Rouge City Club, Baton Rouge, Louisiana. This program is sponsored by the Baton Rouge Academy of Internal Medicine, Baton Rouge Pediatric Society, Baton Rouge Surgical Society, Sixth District Medical Society and the Louisiana Heart Association.

A Social Hour and Dinner are planned for Friday evening beginning at 6:30 p.m. at the Baton Rouge City Club. A conducted tour of the Heart Station at the Baton Rouge General Hospital is planned for Sunday, November 11.

PROGRAM COMMITTEE
THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY
1962 - 1963

The twenty-sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 4-7, The Roosevelt Hotel. Following are the Program Chairmen and Vice-Chairmen.

SECTION ON DERMATOLOGY
Leslie K. Mundt, M. D., Chairman
Raphael Ross, Jr., M. D., Vice-chairman

SECTION ON GASTROENTEROLOGY
William D. Davis, Jr., M. D., Chairman
George E. Welch, M. D., Vice-chairman

SECTION ON GENERAL PRACTICE
Esmond A. Fatter, M. D., Chairman
Charles R. Robinson, M. D., Vice-chairman

SECTION ON GYNECOLOGY
Jason H. Collins, M. D., Chairman
Frank G. Nix, M. D., Vice-chairman

SECTION ON INTERNAL MEDICINE
J. O. Weilbaecher, Jr., M. D., Chairman
Robert R. Burch, M. D., Vice-chairman

SECTION ON NEUROPSYCHIATRY
Kenneth A. Ritter, M. D., Chairman
Theo L. L. Soniat, M. D., Vice-chairman

SECTION ON OBSTETRICS
Edward W. Nelson, M. D., Chairman
Isadore Dyer, M. D., Vice-chairman

SECTION ON OPHTHALMOLOGY
N. Leon Hart, M. D., Chairman
George S. Ellis, M. D., Vice-chairman

SECTION ON ORTHOPEDIC SURGERY
Harry D. Morris, M. D., Chairman
Nick J. Accardo, M. D., Vice-chairman

SECTION ON OTOLARYNGOLOGY
Anthony Failla, M. D., Chairman
Francis E. LeJeune, Jr., M. D., Vice-chairman

SECTION ON PATHOLOGY
Friedrichs H. Harris, M. D., Chairman
George H. Hauser, M. D., Vice-chairman

SECTION ON PEDIATRICS
Joseph A. Diaz, M. D., Chairman
Jack E. Strange, M. D., Vice-chairman

SECTION ON PROCTOLOGY
Patrick H. Hanley, M. D., Chairman
John E. Ray, M. D., Vice-chairman

SECTION ON RADIOLOGY
William S. Neal, M. D., Chairman
Henry M. Duhe, M. D., Vice-chairman

SECTION ON SURGERY
Walter F. Becker, M. D., Chairman
Fred. F. Boyce, M. D., Vice-chairman

SECTION ON UROLOGY
Eugene B. Vickery, M. D., Chairman
R. Prosser Morrow, M. D., Vice-chairman

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled Part I (written) Examination of this Board will be held in various examining centers of the United States, Canada, and military bases outside of the continental United States on Friday, December 14, 1962, at 2:00 P.M.

Candidates eligible to take this examination will be notified on or about November the first where to appear for examination.

The 1962 Bulletin of this Board is now available and prospective applicants are urged to request this brochure and thoroughly familiarize themselves with the current rules and regulations before making application. Bulletins may be obtained by writing to—Robert L. Faulkner, M. D., Executive Secretary and Treasurer, American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

Diplomates are requested to inform the Secretary's office of their change in address.

JOINT STATEMENT ISSUED BY APhA AND NARD SUBSEQUENT TO A MEETING WITH AMA IN CHICAGO

Committees representing the American Pharmaceutical Association and the National Association of Retail Druggists met in Chicago at the invitation of the Judicial Council of the American Medical Association on September 29 to review the matter of a code of mutual understanding with the Council.

Each of the three groups had prepared statements which served as a basis for discussion lasting about two hours. Special consideration was given to the problem of physician-owned pharmacies. The AMA House of Delegates meets in November.

FIFTY-SIXTH ANNUAL MEETING SOUTHERN MEDICAL ASSOCIATION

President-elect of the American Medical Association, Dr. Edward R. Annis, Miami, will be honor guest at the 56th annual meeting of Southern Medical Association in Miami Beach, Nov. 12-15, at the Hotel Fontainebleau.

Dr. Annis will be presented by Dr. A. Clayton McCarty, Louisville, SMA president, at the annual President's Luncheon, where he will be principal speaker.

Dr. Annis, who won national fame as a speaker and debater representing the medical profession in the AMA's campaign against the King-Anderson Bill, is a Miami surgeon.

He is the first president-elect chosen for medicine's highest office in more than 40 years who had not previously served either in the House of Delegates, Board of Trustees, councils or committees of the Association.

Dr. Annis became known to millions of television viewers in his debates with such public figures as Walter Reuther, president of the United Auto Workers, AFL-CIO; U. S. Senators Hubert Humphrey, Minnesota; Jacob Javits, New York; William Proxmire, Wisconsin; and Pat McNamara, Michigan. He also presented Medicine's position on the King-Anderson controversy on the AMA's television program, **Your Doctor Reports.**

BOOK REVIEWS

The Roentgenological Aspect of Nonpenetrating Chest Injuries: by John Riley Williams, M. D., Fellow in Radiology, The University of Texas Southwestern Medical School, Parkland Memorial Hospital, Dallas, Texas and Frederick J. Bonte, M. D., F.A.C.R., Professor and Chairman, Department of Radiology, The University of Texas Southwestern Medical School. Charles C Thomas, Springfield, Illinois, 1961. 135 p. $7.50.

A nonpenetrating chest injury is defined as one which occurred without a break in the skin. If a laceration or a stab wound is present the examiner will immediately consider the possibility of deep lesions, but without initial indicators of this sort only a knowledge of the nature of deep changes by nonpenetrating trauma will lead to the proper diagnosis.

The monograph is divided into sections describing nonpenetrating chest injuries involving the chest wall, pleura, diaphragm, lung, mediastinum, heart and pericardium. A brief conclusion is appended.

Fractures of the ribs, sternum, and spine may be associated with extra pleural and intrapulmonary hematomas as well as lacerations of the pleura, diaphragm, heart and aorta. However, fractures are not necessary for the production of rather severe traumatic conditions within the chest.

The chapter on the various changes in the lungs incident to nonpenetrating trauma is very interesting and very well illustrated. Considerable attention is given to the importance of time sequence in that some changes may develop after several days and some changes have a tendency to resolve quicker than others.

Chapters on the mediastinum and cardiovascular structures are also very interesting and very well illustrated. Traumatic aortic aneurysm may be very insidious in evolution; this is also true of pulmonary hematomas, diaphragmatic hernias,

tracheo-esophageal fistulas, cardiac septal lesions and possibly other types of pathologic change. It is, therefore, advised that follow-up x-ray studies be taken two weeks, six weeks and three months after injury so that delayed complications may be noted.

This small monograph is succinctly written and well illustrated. It should reach the attention of roentgenologists, thoracic surgeons, and others interested in trauma.

CHARLES M. NICE, JR., M. D., PH.D.

A Manual of Neurology and Psychiatry in Occupational Medicine; by Ralph T. Collins, New York, Grune & Stratton, 1961. 244 pages. $6.50.

This book is one of the series of Modern Monographs in Industrial Medicine. It is best described as a handbook for physicians in industry to aid them in recognizing, dealing with, and referring neurological and psychiatric disorders.

At first the reader is disappointed that the book is brief, though the author states that he has written a manual and not a textbook. Then one realizes that the limitation of space has forced the author to organize the material in a most practical and meaningful manner. Thus a great deal of essential information is readily at the fingertips of the physician without any searching on his part.

Of the nineteen chapters of the manual, ten are devoted to neurology and nine to psychiatry. Good techniques of interviewing and examination are lucidly presented for both neurologic and psychiatric disorders. Practical yet difficult problems of optimum time off for disabilities, placement and management of employees with disabilities in the areas under discussion, and treatment reminders are ably handled by the author. No attempt is made by the author to discuss all neurologic and psychiatric disorders but only those of major frequency, and these are selected on the basis of the author's long experience as a consultant to industry.

The author encourages an enlightened policy toward keeping neurologic and psychiatric patients at work and returning them to work after their illness. One of society's grievous errors has been the rejection of patients with disabilities, both physical and mental, but especially mental. Industry has a great opportunity for assuming major responsibility in the rehabilitation of such employees. Thus the statesmanlike attitude presented in this book is most appreciated.

The author is sparing in his use of case material, possibly because of space limitation. Yet in the chapter on "Psychiatry in Occupational Compensation Injuries" three cases are briefly presented, and they play a significant part in illuminating quite meaningfully a difficult subject. Thus this reviewer regrets that much more case material is not used throughout the book.

Dr. Collins, the author of this manual, is a consultant in Neurology and Psychiatry, Eastman Kodak Co., Rochester, N. Y. He has given distinguished national leadership for years to industrial psychiatry and neurology and is one of our major interpreters of the problems relating to occupational health.

The manual he has written is directed to the physician in industry, but the industrial scene is so much a part of most every physician's activity, that this manual ought to find a useful place in the library of many who have no direct relationship with occupational medicine. Also the physician in general practice should find this book very useful for quick reference or review.

JAMES A. KNIGHT, M. D.

Rehabilitation of a Child's Eyes; by Richard Gordon Scobee, 3d ed., Mosby, 1961, 107 p. $3.75.

The publisher calls this book "the most practical and time-saving way to secure the fullest cooperation from parents in the treatment of a child with strabismus". This it is not.

Every consciencious ophthalmologist makes a sincere effort to enlist the cooperation and allay the apprehension of the parents of a strabismic child. He does this by explaining to the best of his ability, in the brief period usually available to him, the nature and prognosis of a neuromuscular anomaly.

It is most disconcerting to the ophthalmologist to find that after what seems a lucid and lengthy explanation of strabismus, the parents seem to be as confused, or more so, than before. We have all longed for a lucid and concise explanation of strabismus that we might give to our patients. This present work only partially satisfies that need. It is written in much too great a depth and breadth for the average parent. However, it may be of considerable help to the pediatrician or to the ophthalmologist who does little pediatric ophthalmology.

The first three chapters are concerned with basic physiology, coordination of the eyes and refractive errors. Chapter 4 deals with the physical and physiological effects of strabismus on the child. Chapters 5, 6 and 7 are concerned with the treatment of strabismus. Chapter 8, the chapter on "Eye Exercises", too enthusiastically supports the role of orthoptics in the treatment of squint. Chapters 9 and 10 are concerned with the operative treatment of strabismus and the postoperative management.

The author's clear and straightforward style make this a book easy and pleasant to read. For the pediatrician or general physician it may be most enlightening, whereas for the average parent it may cause greater rather than lesser concern and anxiety. Its price ($3.75) forces it out of the realm of give away material in the ophthalmologist's office.

There is no simple and easy answer for the busy ophthalmologist who must explain the condition of a strabismic child to disquieted parents. This book may help the ophthalmologist himself in more clearly and briefly describing the nature of strabismus, but it is not an appropriate text to be promiscuously recommended for the average layman.

ROBERT F. AZAR, M. D.

Postpartum Psychiatric Problems; by James Alexander Hamilton, Mosby, 1962. 156 p. $6.85.

This is an unusually handsome volume and the style of writing strikes a classic note, complete with a reference to corn by Chaucer on the final page.

The author is convinced that postpartum illness is a metabolic brain syndrome and reaches back to Hippocrates in a search for clinical descriptions to back his argument. He has only limited case material and laboratory data of recent origin so that the book tends to be rather repetitious and probably could have been presented in a journal article.

The author is apparently aiming this book at a non-psychiatric medical audience and thus he has expanded the subject into a brief psychiatric text with descriptions of the major mental illnesses and their treatment.

WELLS BUDDINGTON, M. D.

The Life Extension Foundation Guide to Better Health; by Harry J. Johnson, Prentice Hall, Inc., New Jersey, 1959, 220 pages, price $4.95.

This book is written by a physician who for many years has concerned himself with preventive medicine. The material presented here is based on his own personal experience and that of the Life Extension Foundation. It is written plainly and simply and as such, lacks the sophistication that current lay medical writing contains.

Each chapter is preceded and followed by a brief summary. Sleep, tension, diet, alcohol, smoking, and exercise are a few of the topics considered as they relate to health. An attempt is made to view these factors scientifically and to dispel erroneous beliefs commonly held.

This book will be useful to physicians who may prescribe it to many patients for the purpose of augmenting their own advice.

L. P. O'MEALLIE, M. D.

Jewish Medical Ethics; by Immanuel Jakobovits, Philosophical Library, 1959, 381 p. $6.00.

Jewish Medical Ethics is a book with a foreword by the world renowned rabbi Dr. Elie Munk in which he discusses the genesis and evolution of ethics and morals as it developed in the Jewish milieu. He attempts, most satisfactorily, to show that science cannot indicate the path that man must pursue in his conduct of right and wrong in his relationship to his patients or peers. Only religion can point up to man, as the prophet so aptly put it, "to do justly, to love mercy, and to walk humbly with thy God." It then follows that only insofar that man is cognizant of the true significance of the fatherhood of God and the brotherhood of man can the physician practice his profession. But generalizations cannot serve as a code of conduct and so through the centuries specific rules for specific problems have been evolved. Because the Jewish people have often been the victim of hostile governments and forced into ghettos, often over long periods of time, with little communication with the outside world, it was reasonable to expect that his rules of conduct for the physician would often have a slant concerning ethical problems differing from that of the general populace whose ideas and ideals of good and bad were in great part the fruits of Christian teaching of its diverse faiths.

The author introduces each topic with a brief discussion of the Christian attitude and then presents the Jewish point of view. This is no polemical treatise and on not a few occasions the approach is quite similar, if not the same. This is an erudite study by a man who is both a physician and a rabbi and so is able to discuss authoritatively important sources in the field of Jewish law, religion and medicine. This is an important book of reference for those interested in the history of medical ethics and the proper approach to the practical problems of practice as they pertain to individuals who adhere to the traditional form of their faith.

The book contains copious notes and references for those interested in the scholarly approach to the subject. As in all reference books the material is presented pointedly and succinctly. This hardly makes for the interest of a novel but the novel will prove of interest. Concentrates are always potent and if not diluted with water can only be taken in small doses but done so frequently will result in a most enlightening experience.

I. L. ROBBINS, M. D.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Grune & Stratton, N. Y.: Heart-Lung Bypass: Principles and Techniques of Extracorporeal Circulation, by Pierre M. Galletti, M. D. and Gerhard A. Brecher, M. D.

E. & S. Livingstone Ltd., London: Diabetes Mellitus in the Tropics, by J. A. Tulloch, M. D.

The C. V. Mosby Co., St. Louis: Doctor and Patient and the Law, by C. Joseph Stetler, LL.B., and Alan R. Moritz, M. D. (4th edit.); Synopsis of Neurology, by Francis M. Forster, M. D.



LOMOTIL®

(brand of diphenoxylate hydrochloride with atropine sulfate)

ANTIDIARRHEAL TABLETS and LIQUID

lowers motility / relieves cramping / controls diarrhea

Roentgenographic studies by Demeulenaere[1] established that a single dose of 10 mg. of Lomotil slowed gastrointestinal transit within two hours and that it maintained its decelerating activity for more than six hours.

In diarrhea this lowered propulsion permits a physiologic absorption of excess fluid, lessens frequency and fluidity of stools and gives safe, selective, symptomatic control of most diarrheas. Concurrently, it conserves electrolytes and controls cramping.

Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

NOTE: Lomotil is an exempt narcotic preparation.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastrointestinal, Acta Gastroent. Belg. 21 674-680 (Sept.-Oct.) 1958.
2. Kosich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastroent. 35 46-49 (Jan.) 1961.
3. Weingarten, B.: Weiss, J., and Siman, M.: A Clinical Evaluation of a New Antidiarrheal Agent, Amer. J. Gastroent. 35 628-633 (June) 1961.

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. . . in minutes

patient protected
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Nephenalin®

(the dual-action anti-asthmatic tablet)

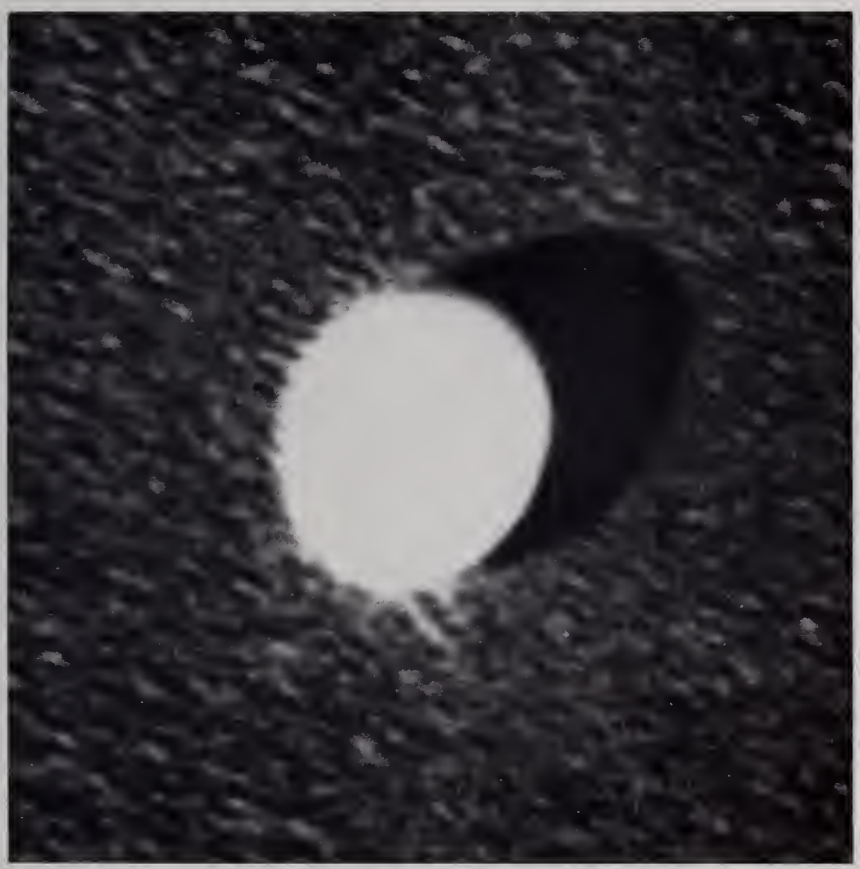
. . . works with nebulizer speed—provides four-hour protection

One NEPHENALIN tablet provides: *air in a hurry*—through sublingual isoproterenol HCl, 10 mg. *air for hours*—through theophylline, 2 gr.; ephedrine, ⅜ gr.; phenobarbital, ⅛ gr.

Dosage: Hold one NEPHENALIN tablet under the tongue for five minutes to abort the asthmatic attack promptly. Then swallow the tablet core for four full hours' protection against further attack. Only one tablet should be taken every four hours. No more than five tablets in 24 hours.

Supplied: Bottles of 50 tablets. For children: NEPHENALIN Pediatric, bottles of 50 tablets.

Caution: Do not administer NEPHENALIN with epinephrine. The two medications may be alternated at 4-hour intervals. NEPHENALIN should be administered with caution to patients with hyperthyroidism, acute coronary disease, cardiac asthma, limited cardiac reserve, acute myocardial damage, and to those hypersensitive to sympathomimetic amines. Phenobarbital may be habit forming. THOS. LEEMING & CO., INC., New York 17, N.Y.





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Logical support for the atherosclerosis diet

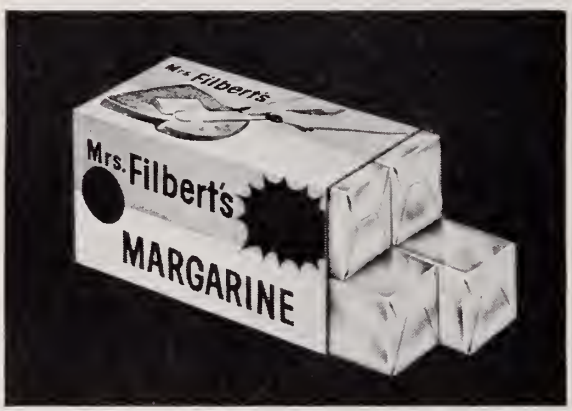
A recent report* in the *JAMA* on atherosclerosis states, "...it appears logical to attempt to reduce high concentrations of cholesterol and other serum lipids as an experimental therapeutic procedure."

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Moreover, when you recommend any one of Mrs. Filbert's Margarines, your patient is assured of unmatched taste and flavor satisfaction—an important consideration in promoting adherence to any therapeutic regimen.

*AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181: 411-423 (August 4, 1962).



Mrs. Filbert's Margarine is a popular, conventional-type margarine with no premium price. It is made from the finest domestic vegetable oils, which are partially hydrogenated for texture, but remain over 80% unsaturated. It has a ratio of polyunsaturates to saturates in excess of 1 to 1. Of the total fatty-acid content, 7% is cis-cis linoleic acid.

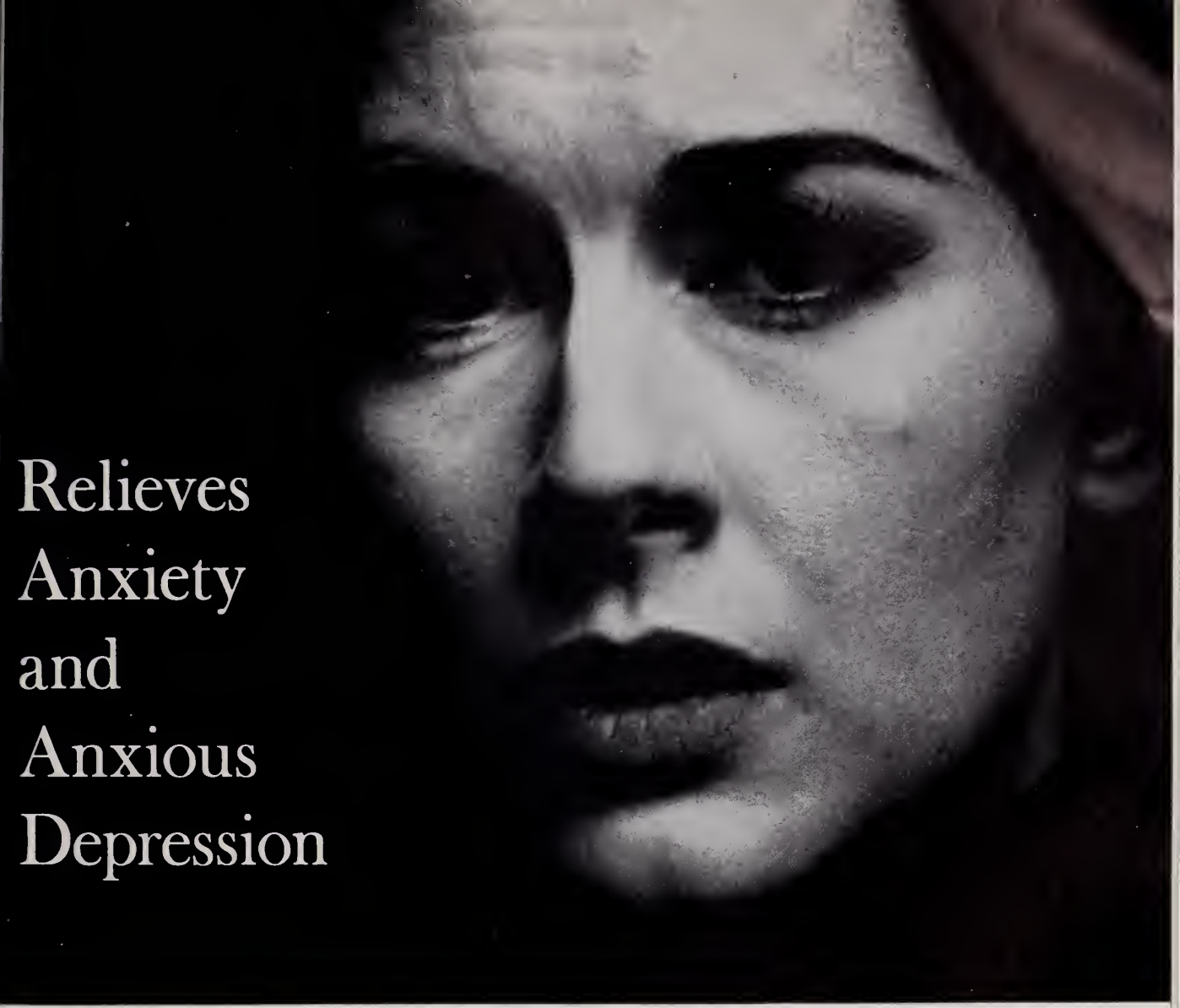


Mrs. Filbert's Whipped Margarine contains the same number of calories per pound as ordinary margarine, but contains 30% *fewer calories per pat* because it is whipped. When spread normally, it provides satisfaction with a reduction in fat calories. And its ratio of polyunsaturates to saturates exceeds 1 to 1. Of the total fatty-acid content, 7% is cis-cis linoleic acid.

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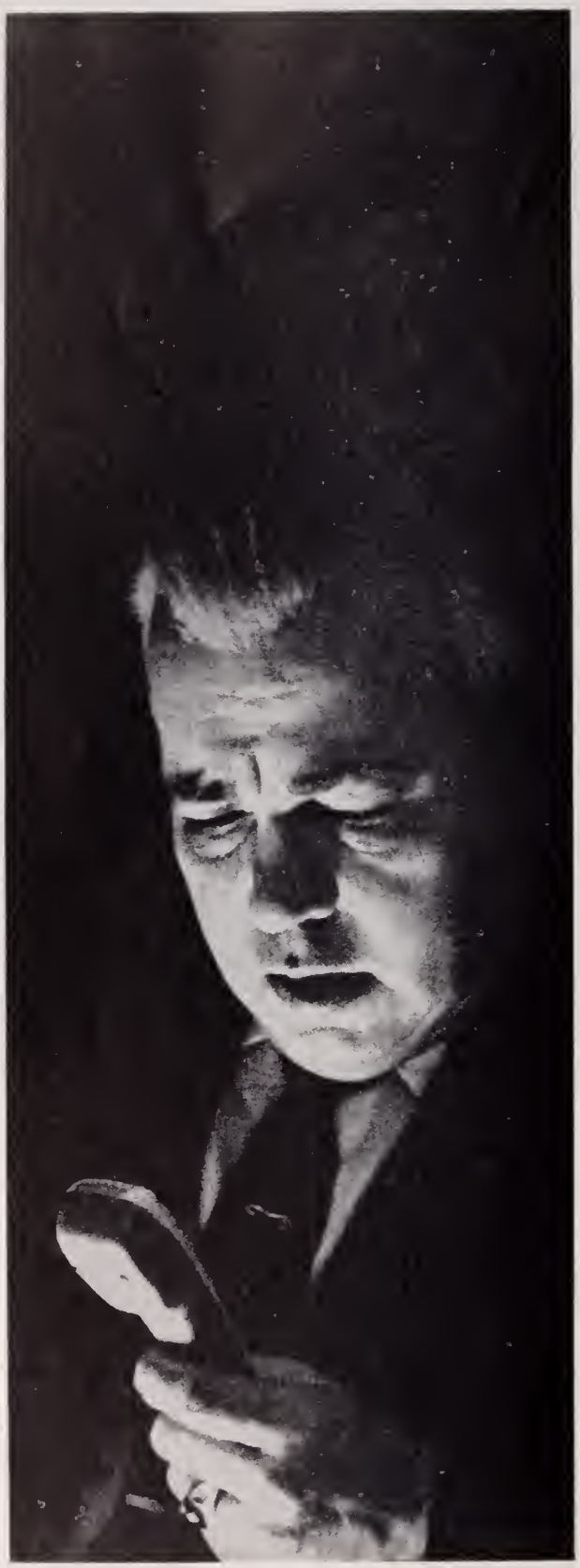
Usual dosage: One or two 400 mg. tablets t.i.d.
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New Isuprel Compound Elixir is a balanced expectorant bronchodilator. It contains potassium iodide to promote expectoration and relieve dry cough. Its three bronchodilators, Isuprel, ephedrine, and theophylline, keep bronchi continuously dilated. Luminal is included to negate possible side effect from adrenergic medication and to provide very mild sedation for the patient.

New Isuprel Compound Elixir alleviates symptoms...prolongs relief in chronic bronchitis and emphysema.

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Isuprel® (brand of isoproterenol) HCl	2.5 mg.
Ephedrine sulfate	12 mg.
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Potassium iodide	150 mg.
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How Supplied: Isuprel Compound Elixir is supplied in bottles of 16 fl. oz.

Before prescribing be sure to consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

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Highly effective in other emetic conditions: postoperatively, following irradiation procedures, infant colic.

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Tablets · Drops · Intramuscular

time-tested for efficacy and safety

1. Groskloss, H.H., Clancy, C.L., Healey, E.F., McCann, W.J., Maloney, F.D., Loritz, A.F.: Clinical Medicine (Sept.) 1955.
Study involving 287 patients. 261 patients experienced excellent to good results with Bonadoxin for relief of nausea and vomiting of pregnancy. No side effects reported.[1]

2. Albertson, H.A., Trout, Jr., H.H., Daily, F.W.: The American Journal of Surgery (Sept.) 1956.
"As a result of this study, it is our belief that the routine prophylactic use of the combination of meclizine hydrochloride and pyridoxine is a safe and effective method for lessening the incidence of postoperative nausea and vomiting. We are employing this preparation as a routine pre-operative medication."[2]

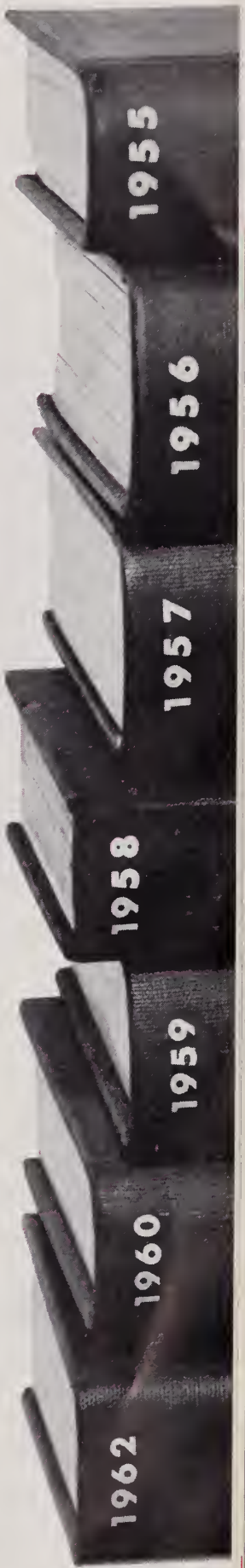
3. Goldsmith, J.W.: Minn. Med. (Feb.) 1957.
Study involving 620 patients, 537 patients experienced moderate to complete improvement of nausea and vomiting of pregnancy with Bonadoxin. Toxicity and intolerance to the medication in the dosage employed in these studies was zero.[3]

4. Codling, J.W.; Lowden, R.J.: Northwest Med. (March) 1958.
Study involving 76 pregnant patients with nausea and vomiting. The results indicated an overall response in 70 of 76 patients treated. No side reactions were observed in this clinical study.[4]

5. Bentley, M.D.: Journal of the Mich. State Med. Soc. (Sept.) 1959.
[Bonadoxin] "was found clinically effective in the prevention of pre-operative and post-operative nausea and emesis in 157 patients who underwent ocular surgery, while control drugs alone could not completely eliminate the symptoms. Bonadoxin did not cause side reactions in the preoperative or postoperative phase of this study."[5]

6. Bethea, R.C.: International Record of Med. (May) 1960.
"Our investigation of this drug indicates that in 88 per cent of the cases satisfactory relief of the distressing symptoms of early pregnancy was obtained without undesirable side effects, including sedation."[6]

7. Sklaroff, D.M.; Karayannis, N.: Current Therapeutic Research (June) 1962.
"Based on these results, indicating 92 per cent effectiveness, meclizine-pyridoxine (Bonadoxin®) may be considered a valuable compound in the control of post-irradiation nausea and vomiting. The preparation proved to be safe and fast-acting in bringing therapeutic relief to carcinoma patients with radiation sickness."[7]



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Whether treating boutonneuse fever, bronchopneumonia, or a host of other infections, physicians throughout the world continue to rely on the effectiveness, relative safety, and exceptional toleration of Terramycin in broad-spectrum antibiotic therapy. This continuing confidence is based upon thousands of published clinical reports and successful experience in millions of patients. *The next infection you see will more than likely be "Terra-responsive."*



IN BRIEF The dependability of Terramycin in daily practice is based upon its broad range of antimicrobial effectiveness, excellent toleration, and low toxicity. As with other broad-spectrum antibiotics, overgrowth of nonsusceptible organisms may develop. If this occurs, discontinue the medication and institute appropriate specific therapy as indicated by susceptibility testing. Glossitis and allergic reactions to Terramycin are rare. For complete information on Terramycin dosage, administration, and precautions, consult package insert before using.

More detailed professional information available on request.

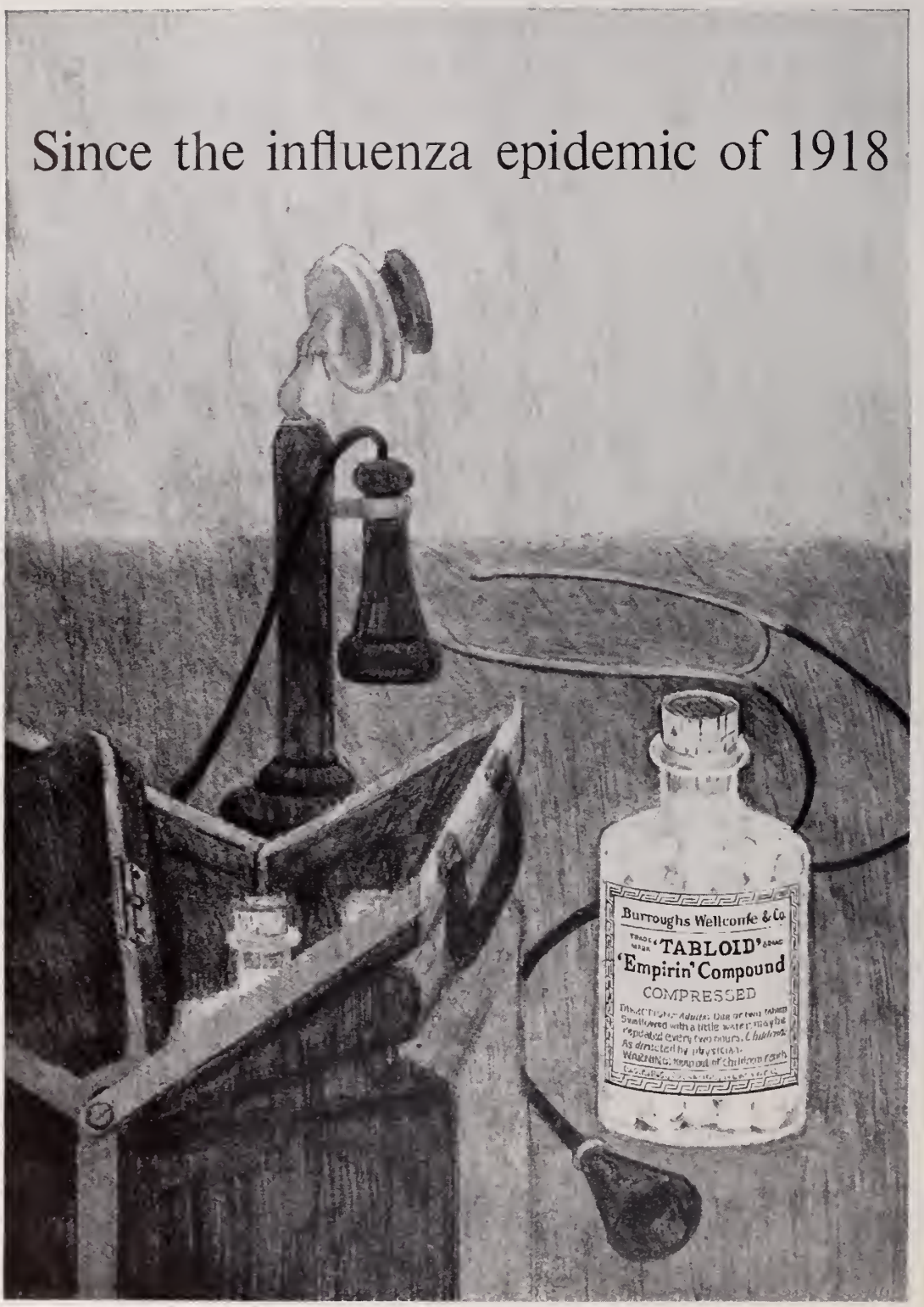
Boutonneuse fever is a tick-borne, acute, febrile disease often affecting children. The bite site becomes a small, necrotic ulcer. A striking macular or maculopapular eruption develops on the trunk, palms and soles. Onset is sudden, with chills, high fever, violent headache and lassitude. The high temperature—up to 103° F.—characteristic of both boutonneuse fever and bronchopneumonia, drops rapidly following initiation of Terramycin therapy.

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....the first choice of many physicians to relieve aches, pains, fever, and general malaise of colds and flu.

Symptomatic and supportive treatment of patients with upper respiratory infections still consists largely of rest, analgesics, fluids and nasal decongestants. During the fateful influenza epidemic of 1918, 'Empirin' Compound was widely used and became well known as a well tolerated and reliable analgesic combination. It was one of the few available analgesic products effective in simultaneously reducing fever and relieving the general malaise which often accompany the flu.

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'EMPIRIN' COMPOUND with CODEINE PHOSPHATE *



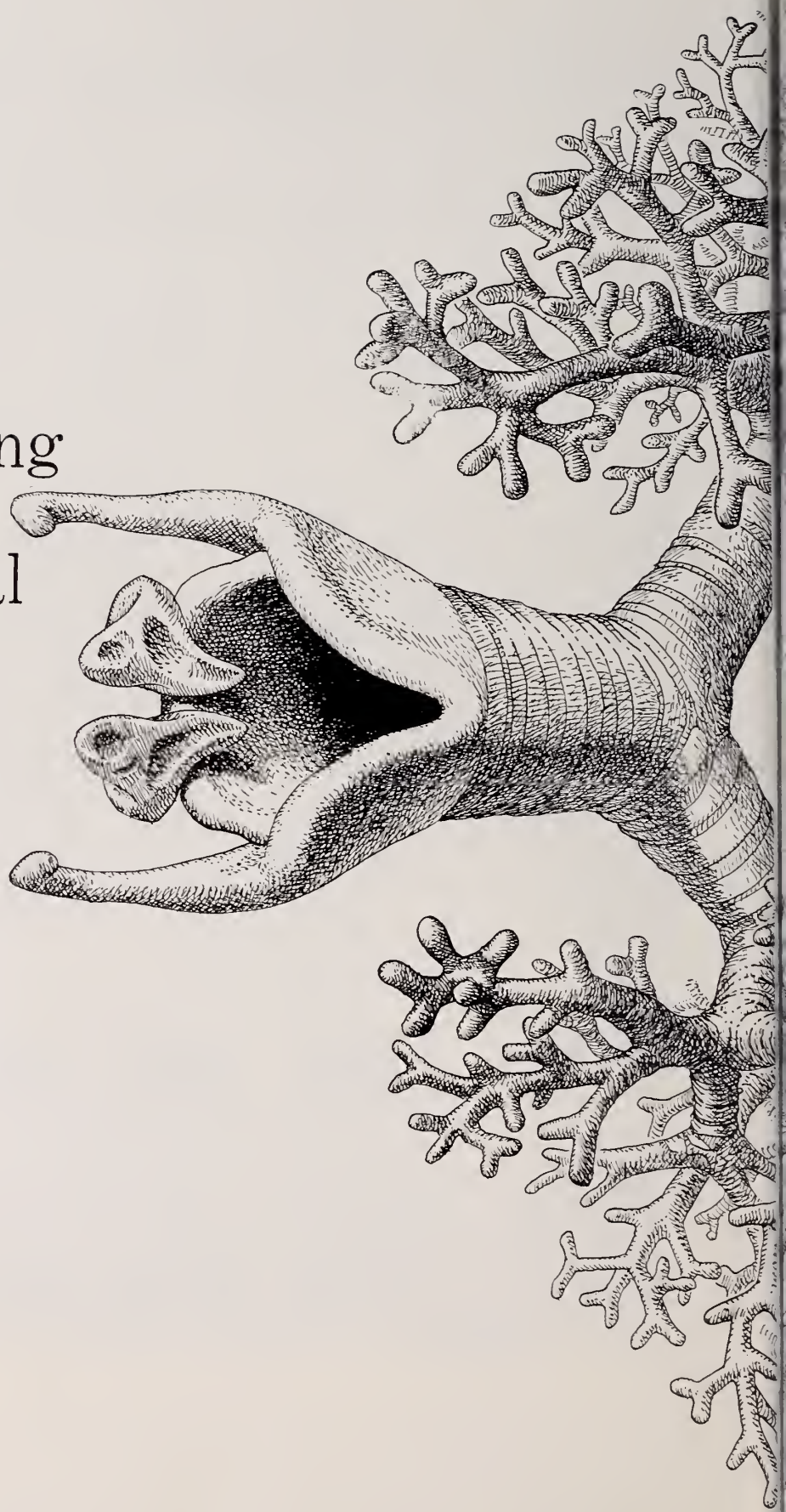
gr. ⅛ gr. ¼ gr. ½ gr. 1

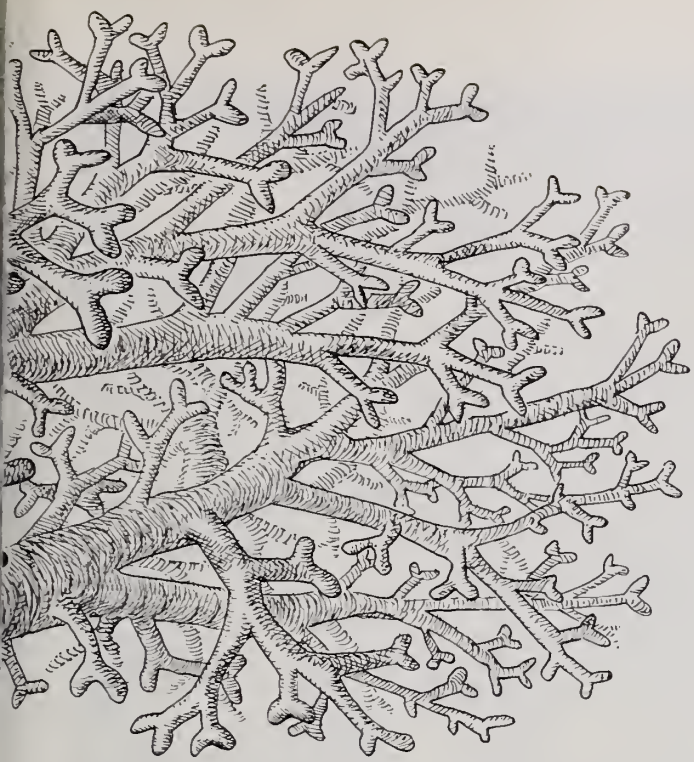


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With ARISTOCORT, asthmatic patients obtain sustained relief of wheezing, dyspnea, and spasmodic coughing. It is of particular value in ameliorating severe attacks that may have serious sequelae. With ARISTOCORT, many patients who might otherwise be invalids are able to continue their customary livelihoods or maintain their regular household activities. Yet this symptomatic relief is not often accompanied by the hormonal collateral effects —sodium retention, edema, emotional disturbance, insomnia, voracious appetite— that so often have been a deterrent to steroid therapy.

SUPPLIED: Scored tablets (three strengths), syrup and parenteral. Request complete information on indications, dosage, precautions and contraindications from your Lederle representative, or write to Medical Advisory Department.

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How to help your patient stick to a low-purine diet

The acceptance of any diet depends on its appetite appeal. And this low-purine diet is unusually appetizing! Ham rolls stuffed with scrambled eggs or chilled egg salad make a delicious entree, as does a casserole of eggplant and tomato layered alternately with cottage cheese. A dash of lemon juice flavors fresh vegetables like string beans and beets. Fresh skim milk mixed with dry skim milk powder add a "creamy" taste to oyster stew. Tuna-burgers go nicely with noodles. Fruits and gelatins make excellent, easy desserts, while corn and rice flakes brighten breakfasts.



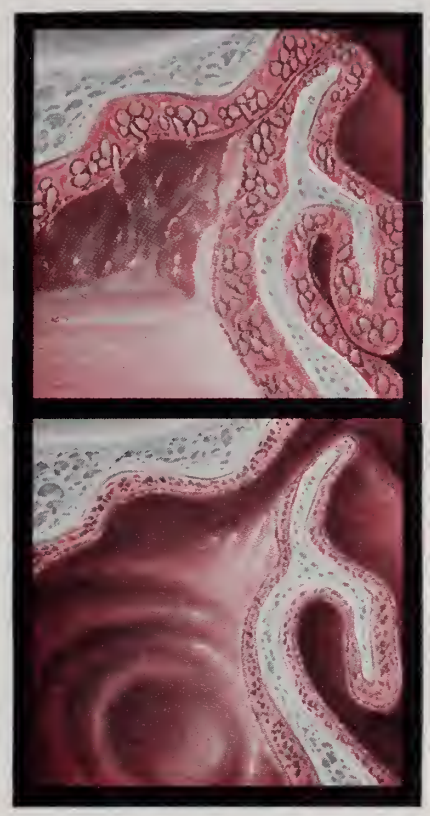
And a glass of beer can add zest to your patient's diet

104 calories,
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In colds and sinusitis unsurpassed in providing drainage space without chemical harm



The clogged sinus
In sinusitis, the mucous membrane becomes hyperemic and edematous, lymph glands and goblet cells hyperactive. Ostium is closed by edema and secretions cannot drain freely.

The normal sinus
Magnified anatomy of a portion of maxillary sinus showing mucous membrane with cilia and lymph glands. Ostium is normal and patent.

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NASAL SPRAYS AND SOLUTIONS

When there is nasal turgescence, tiny orifices of sinus ostia tend to clog. Neo-Synephrine nasal solutions and sprays reduce edematous tissues on contact to provide prompt relief. As turbinates shrink, obstructed sinus ostia open, drainage and breathing become freer and the boggy feeling of a cold disappears.

Delicate respiratory tissue and its natural defenses are not harmed by exceptionally bland Neo-Synephrine; systemic effects are nil; it does not sting. For years it has been recommended for prevention and treatment of sinusitis.[1-3] Repeated applications do not lessen effectiveness.

Available in plastic nasal sprays for adults (½%) and children (¼%), in dropper bottles of ⅛, ¼ or 1 per cent.

1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): **Current Therapy 1952**, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

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SUPPLIED: Bottles of 60.

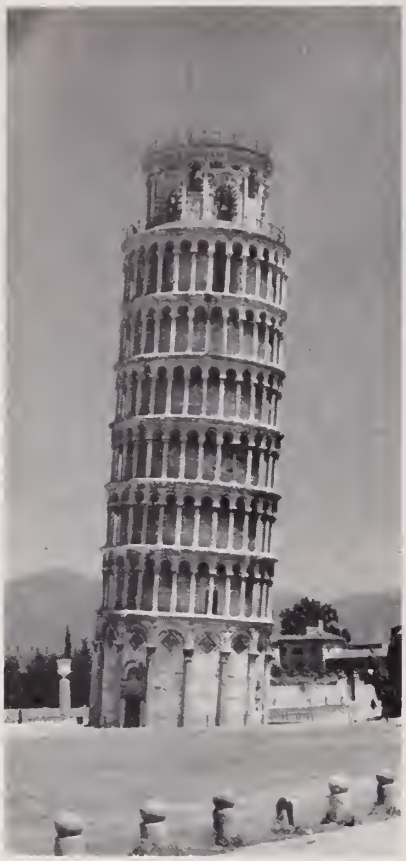
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DOSAGE: One or two tablets before retiring until regularity is achieved or as directed by a physician.

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ANDROGEN-THYROID-COMBINATION

in two convenient dosage forms

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Each yellow tablet contains:	Each orange tablet contains:
Methyl Testosterone ....2.5 mg.	Methyl Testosterone .....5 mg.
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AVAILABLE: Bottles of 100 and 500 at your pharmacy.

CAUTION: Not to be used when testosterone is contra-indicated. Federal law prohibits dispensing without prescription.

1. *Methyltestosterone-Thyroid in Treating Impotence*, A. S. Titeff, *General Practice, Vol. 25, No. 2, February, 1962, pp. 6-8.*
2. *Thyroid-Androgen Relations*, L. Hellman, et al., *The Jrl. of Clin. Endocrinology and Metabolism, August 1959.*

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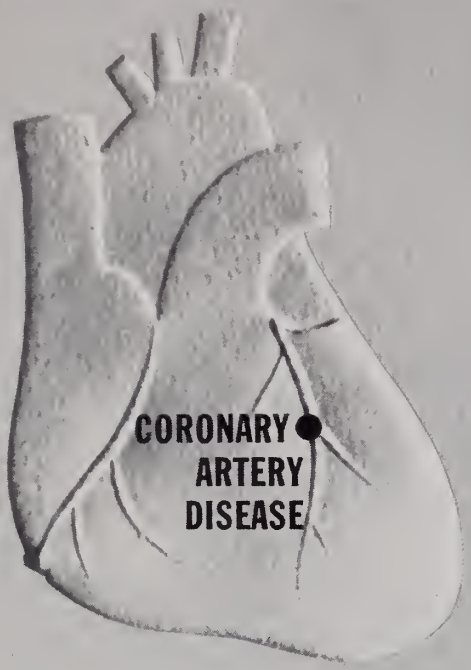
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References: (1) Root, H. F., and Bradley, R. F., in Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: The Treatment of Diabetes Mellitus, ed. 10, Philadelphia, Lea & Febiger, 1959, pp. 411, 437. (2) Joslin, E. P.; Root, H. F.; White, P., and Marble, A.: *ibid.,* pp. 188-189. (3) Marks, H. H., *et al.:* Diabetes 9:500, 1960. (4) Marble, A., in Summary of Conference on Diabetic Retinopathy, Survey Ophth. (Part 2) 6:611-612, 1961.

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When you wish to relieve anxiety, yet encourage the patient to engage in his normal activities, consider 'Stelazine'.

1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

For prescribing information, please see *PDR* or available literature.

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Each 100 cc contains:

Sulfadiazine ..... 3.381 gm. (Microcrystalline)
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In a palatable, stable emulsion pleasantly flavored with True Raspberry Flavor. Each average teaspoonful (80 min.) represents .5 gm. (7.7 grs.) of three combined sulfa drugs in suspension. Supplied in pint bottles only.

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HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

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The muscle relaxant with an independent pain-relieving action

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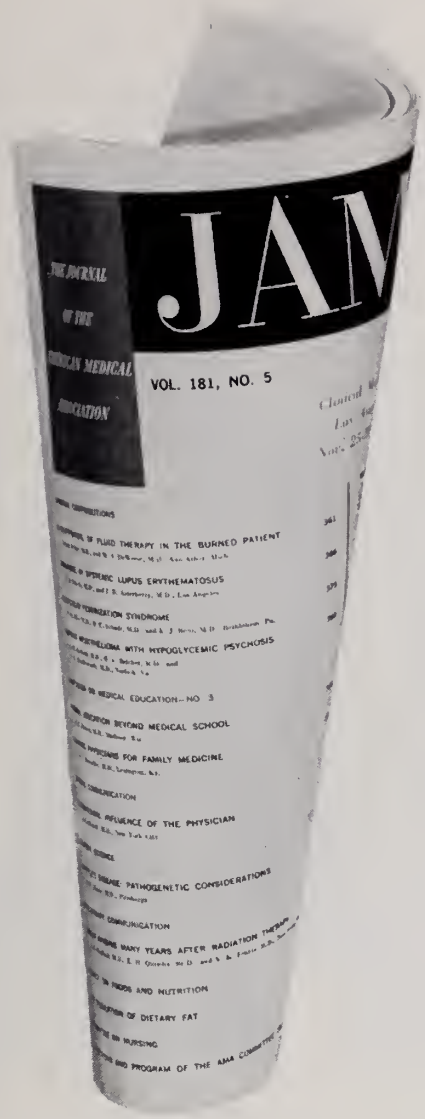
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From the Aug. 4, 1962 issue of The Journal of the American Medical Association.

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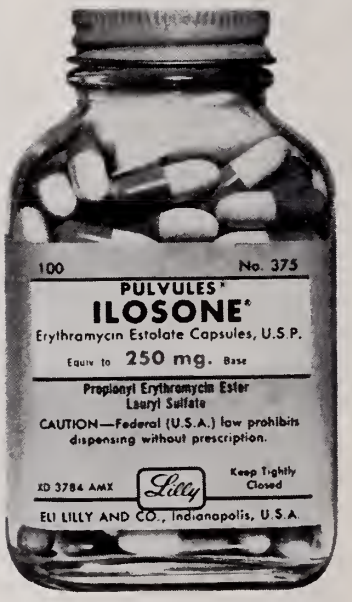
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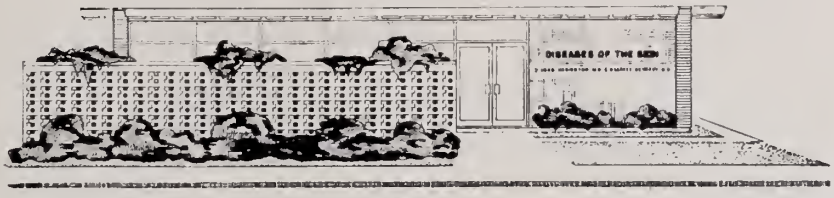
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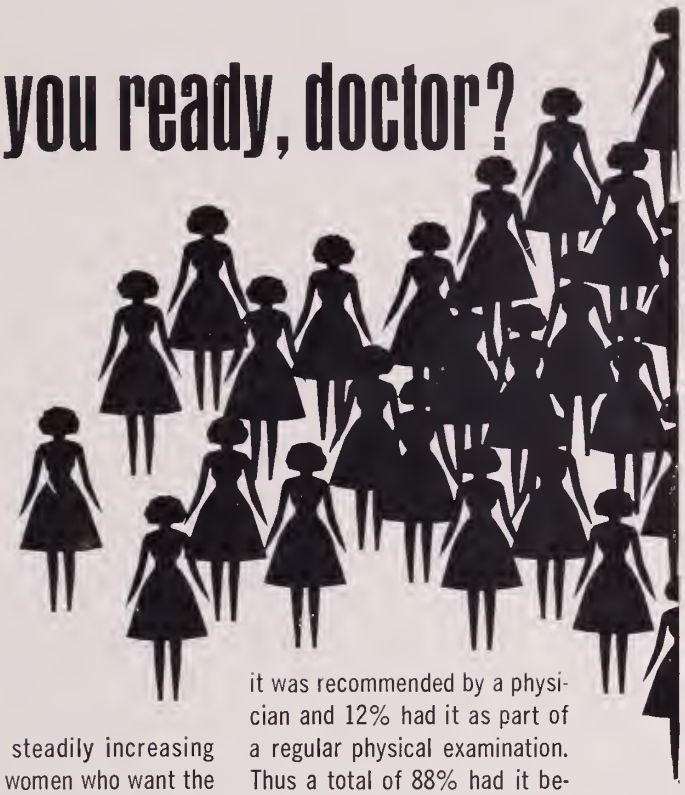
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1. Ford, R. A., and Blanchard, K.: Current Therapeutics, 1961.

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References: (1) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* **10**: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* **11**:392, 1960.

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1. Stevenson, L.E.: M. Ann. District of Columbia *30*:409 (July) 1961.



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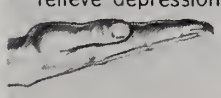
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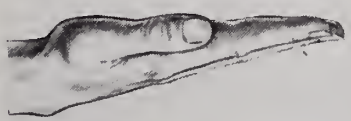
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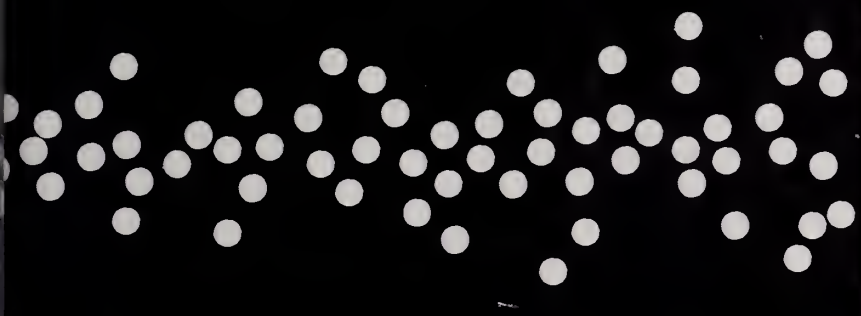
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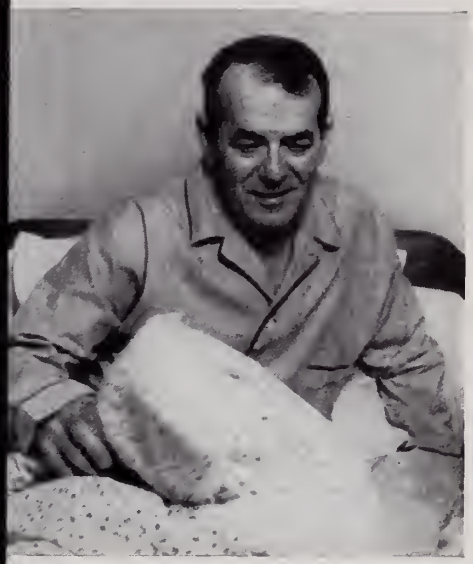


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Rabies in Man and Animals*

• An authoritative article on a fatal disease written by the Chief of the Veterinary Public Health Section, Communicable Disease Center.

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RABIES is an unusual disease in man and animals, inasmuch as it is almost invariably fatal. Some may question the word "almost." Apparently bats can survive the disease as demonstrated by the presence of neutralizing antibodies in their serum and recovery of virus from the saliva of bats that survived for months. Research workers have reported rabies recoveries in mice and dogs. There is also the case of a well known rabies research worker who survived a disease that caused a general paralysis, which he thought was the paralytic form of rabies.

Clinical Disease

The onset of the disease is marked by one to four days of prodromal symptoms: fever, headache, apprehension, malaise, anorexia, nausea and sore throat. The temperature is raised one to three degrees (1-3° F.). Respiration tends to be shallow.

The most important early sign of diagnostic significance is some abnormal sensation about the wound. This will occur in about 80 per cent of the cases but this should not be confused with normal healing sensations of a wound. Sometimes the patient will complain of a dull, constant pain referable to the nervous pathway proximal to the wound, or there may be intermittent stabbing pains radiating distally to the wound.

The early symptoms are thought to be caused by the stimulating action of the virus on various groups of neurons, especially those of the sensory system. There is apt to be extreme sensitivity to drafts, noise, light, and even bed clothes which produce a stimulation. Objective signs include increased muscle reflexes, muscle tics and muscle tone. Facial expression is apt to be overactive. The pulse is rapid. Symptoms caused by the stimulation of the sympathetic nervous system are dilation of the pupils, lacrimation, salivation, and excessive sweating.

In some cases the excitation phase lasts up to the time of death. However, depressive or paralytic symptoms may be predominant from the beginning, or may supervene at any stage. The depressive cases are confusing and have actually been misdiagnosed as mental illness, with the rec-

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, Monroe, May 8, 1962.

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ommendation the patient be placed in a mental hospital, before the acute encephalitis was recognized.

One of the important diagnostic signs in man as well as animals is the apprehension that builds up in the excitatory phase, along with increasing nervousness, insomnia and anxiety. There is a strong desire to be up, wandering aimlessly about. Dogs and wild carnivora will go for miles across the countryside. In man a sense of impending death is frequent. Patients will insist they are going to die even though the clinical disease has not appeared.

The outstanding clinical symptom of rabies is related to swallowing. The spasms of the muscles of deglutition that prevent swallowing occur when the fauces come in contact with a fluid. The fluid is then expelled with considerable violence and painful contraction of the muscles of deglutition. Subsequently the sight, smell or sound of water or liquids which suggest swallowing, may precipitate a spasm of the throat muscles. This is the origin of "hydrophobia" or fear of water, which has been used to describe the disease since ancient times. The Greek physician Hippocrates was one to use the term.

Due to the difficulty of swallowing in man and some animals the patient becomes dehydrated, and the mouth and tongue become dry and parched. In order to avoid swallowing the patient allows the saliva to drool and hang. The frothing of saliva in man and animals is seen in advanced excitatory cases. Choking when attempting to swallow may cause such severe spasms of the respiratory muscles that their breath is cut off and cyanosis results.

Maniacal behavior is not uncommon but biting and fighting is rare, although it may occur. A few years ago a rabid human being escaped from a hospital and bit 20 or 30 nurses, interns, physicians and policemen before he was restrained. Periods of intense excitement are interspersed with calm, at which time the patient is well oriented and answers questions intelligently.

Weakness of the facial muscle may be present, so that the person has difficulty in closing his eyes or mouth, and the face becomes blank, with a glassy-eye look. This also occurs in dogs and other canidae. Paralysis is not as noticeable in man as in animals although there is often a weakness of the muscle groups related to the site of the bite. In animals the paralytic disease is referred to as dumb rabies, and becomes so extensive that they cannot move. The weakness of the phonation muscles results in hoarseness or loss of voice, or straining in both man and animals.

The majority of human patients die in an acute excitatory phase during a convulsion but those that survive the excitement stage enter a terminal stage of apathy, stupor and coma, with progressive paralysis leading to death.

In rare instances, the course of the paralysis follows that of the Landry syndrome, beginning with the muscles of the legs, a progressive ascending paralysis follows that has no relation to the site of infection. The innervation of the musculature of the bladder and intestinal tract is affected so that retention and obstipation develop early. Incontinence occurs in some persons. Consciousness is retained until late in the disease. The human disease following bat bites in Trinidad, Mexico, and South America is usually the paralytic type.

The diagnosis of human rabies is not difficult when there is a history of exposure to a rabid animal. But when a patient is presented with an acute encephalitis or an ascending paralysis with no history of an animal bite then the diagnosis can be missed. The clinical course of rabies can be similar to that of poliomyelitis, or other polio-like diseases as well as infectious encephalitis.

Where there is a history of dog or animal bite it is not uncommon to encounter rabies hysteria. In these cases the patients attempt to emulate convulsive seizures, and in one case observed by a renowned rabies expert, the patient sat in bed and barked. Persons suffering from rabies hysteria can be managed with seda-

tives that seldom have effect on authentic cases.

The non-fatal or abortive type of rabies described by Koch is uniformly a paralytic disease. Clinically it is impossible to differentiate treatment paralysis following rabies vaccination from paralytic rabies.

Failure to demonstrate rabies virus in the brain at autopsy, either by the fluorescent antibody technique or mouse inoculation, supports the diagnosis of paralysis due to the vaccine. Differentiation by immunologic tests is not possible inasmuch as the vaccine and disease itself stimulate antibody formation; likewise, histological examination cannot aid.

Some rabies investigators state that a saliva test should be done on all human patients suspected of being exposed to rabies and that become ill. This would contribute to answering the question, does man recover from rabies, because if rabies virus were present in the saliva and the patient survives, the answer is obvious.

Treatment

The indications for treatment of persons exposed or suspected of being exposed to rabid animals has always been difficult but the recommendations of the World Health Organization Expert Committee on Rabies probably provide the best course to follow. (Appendix).

The WHO has periodically reviewed the treatment of humans exposed to rabies. In earlier WHO reports it was pointed out that hyperimmune horse serum, which is now available in most state health departments, was of specific value in the prevention of human rabies. The serum to be most effective should be given as soon as possible after exposure. Administration of serum should be followed by a complete course of at least 14 daily inoculations of vaccine and two more vaccine inoculations at ten and twenty days, respectively, after completion of vaccination course.

The most dramatic report on the value of hyperimmune serum comes from Iran, where in 1954 a rabid wolf invaded a village and bit 29 persons before it was killed. It is reported that 18 persons were bitten on the head, and one of these, a child, received a wound which penetrated the skull resulting in an intercerebral inoculation of virus. In bites around the head and face by a rabid animal in Iran, the mortality may be as high as 50 per cent despite vaccine therapy. Five of the 18 received only vaccine, while the others were given one or more rabies serum injections beginning thirty-two hours after exposure, followed by vaccine. Four of those bitten on the body below the neck were given serum plus vaccine, and 7 were given vaccine alone. There were 4 deaths among the 29 exposed; 3 of these were among the 5 bitten on the head who received only vaccine and 1 bitten on the head who had one injection of serum plus vaccine. The child who suffered the intercerebral wound and received six injections of serum plus vaccine, survived.

The explanatory note in the WHO guide (Appendix) describes how the physician should use serum. The complication of serum sickness can be avoided by the use of antihistamine drugs in large sustaining doses for several days. With those subject to immediate anaphylactic reaction, as determined by skin test, desensitization is necessary.

Nervous tissue vaccines have been used since Pasteur first developed the rabbit brain and cord type vaccine. Various modifications over the years have improved these vaccines but the problem of post vaccinal accidents has persisted in many areas of the world, especially the United States. Some years ago a survey revealed that the rate ranged from 1:500 to 1:6000 with fatalities up to 25 per cent of those accidents.

When neuroparalytic accidents or premonitory symptoms occur, the WHO Expert Committee on Rabies recommends that if the immunization is adequate that no more be given; if further immunization is necessary, that a vaccine prepared from non-nervous tissue should be used in place of the brain tissue.

In recent years, the successful use of non-nervous tissue vaccines in animals has

stimulated their evaluation in man. In dogs, the low chicken egg passage live rabies vaccine has been used successfully throughout the world. More recently, a high chicken egg passage vaccine that was developed for cattle has been used experimentally in man. A duck embryo vaccine which was evaluated on animals a few years ago is now being used extensively in man. This is being produced from the same rabies virus strain that is used in making the nerve tissue vaccine but the advantage in activated duck embryo vaccine is that it contains only a minimal amount of factors responsible for allergic encephalitis as compared with nervous tissue vaccines. This vaccine along with the high egg passage vaccine has been used successfully in prophylactic immunization of certain groups with unusual risks of repeated exposure to rabid animals such as veterinarians, dog wardens, field naturalists, and laboratory workers. In these groups, repeated exposure means repeated treatment, thus increasing the possibilities of severe reaction to the neural tissue vaccines.

The management of wounds requires that they be cleansed with soap and water immediately. Various studies have shown that prompt washing of the wound is very effective. The quaternary disinfectants appear to be the most desirable, more so than strong acids or iodine compounds. It is thought that the wound should not be sutured immediately. The infiltration of the wound site with hyperimmune serum has been recommended for some years, and has worked effectively.

Control

The control of rabies is dependent on the elimination of the disease in animals, especially dogs and cats which have the closest contact with man. Wild animals such as the skunk and fox have always been sources of disease; but, in recent years, they have become much more important as their numbers have increased. In the United States, the reported wild animal cases exceed that of dogs and cats threefold. The efficacy of canine rabies vaccine is the principal reason for the decline of dog rabies along with the disease in cats.

Regardless of the progress that has been made to date there is need for more intensive rabies control among pet animals. Every pet dog and cat should be immunized against rabies, so as to protect the animal, the home, and the community.

The control of sylvatic rabies is much more difficult and costly, and should only be attempted by wildlife management experts. Trapping and poisoning have been the most accepted methods, when done under supervision.

The spread of bat rabies across the United States and into Canada, since 1953, has raised a new obstacle in the control and eradication of this disease. The bat disease was first reported in Florida in 1953. Since then, more than 500 isolations have been made in some 30 widely

TABLE 1
INCIDENCE OF RABIES IN THE UNITED STATES BY TYPE OF ANIMAL
1953-1961*

Year	Dogs	Cats	Farm Animals	Foxes	Skunks	Bats	Other Animals	Man	Total
1953	5,688	538	1,118	1,033	319	8	119	14	8,837
1954	4,083	462	1,032	1,028	547	4	118	8	7,282
1955	2,657	343	924	1,223	580	14	98	5	5,844
1956	2,592	371	794	1,281	631	41	126	10	5,846
1957	1,758	382	714	1,021	775	31	115	6	4,802
1958	1,643	353	737	845	1,005	68	157	6	4,814
1959	1,119	292	751	920	789	80	126	6	4,083
1960	697	277	645	915	725	88	108	2	3,457
1961	594	217	482	614	1,254	186	120	3	3,470

* Data prior to 1960 from USDA, ARS. Subsequent data from PHS, CDC.

separated States and Canadian provinces. These include 20 different species of colonial bats and four solitary or tree-living species. Bat rabies is common in Central and South America but fortunately is not a frequent source of human disease. The disease has also been reported in Germany, Yugoslavia, and Turkey. In the United States, there are more than 100 reports of rabid bats attacking humans. Five human deaths have been reported from Texas (2), California (2), and Wisconsin (1). The control of bat rabies is most difficult as there is no satisfactory method for reducing their numbers. They can be kept out of attics, belfreys, and buildings by the use of chemical repellants, followed by structural bat-proofing. Persons bitten by a bat should treat the bite as a potential rabies exposure.

Conclusion

Even though the incidence of human rabies has declined drastically in the past decade, it still remains a problem because any person bitten by a dog, cat, fox, skunk, raccoon, or bat must be treated as though they were exposed to rabies until there is definitive evidence to the contrary. The advances in human treatment including the use of hyperimmune serum, better management of the wound, and improved vaccine have reduced the number of fatalities and post-vaccinal complications. The successful control of dog and cat rabies has removed the greatest source of human exposure, but this must be intensified to the point where it is no longer the cause of any human exposure. The problem of wildlife rabies, makes the task of eventual control and hoped-for eradication much more difficult than we would have expected.

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(See Appendix page 432)

Appendix

GUIDE FOR SPECIFIC POST-EXPOSURE TREATMENT

Nature of exposure	Biting animal *		Recommended treatment ** (in addition to local treatment)
	At time of exposure	During observation period of ten days	
I. No lesion: indirect contact	Rabid	—	None
II. Licks:			
(1) unabraded skin	Rabid	—	None
(2) abraded skin, scratches and unabraded or abraded mucosa	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine at first signs of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Start vaccine immediately
III. Bites:			
(1) mild exposure	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine at first signs of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Start vaccine immediately
	(d) wild (wolf, jackal, fox, bat, etc.)	—	Serum immediately, followed by a course of vaccine †
(2) severe exposure (multiple, or face, head finger or neck bites)	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Serum immediately; start vaccine † at first sign of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Serum immediately, followed by vaccine; vaccine may be stopped if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Serum immediately, followed by vaccine †
	(d) wild (wolf, jackal, fox, bat, etc.)		

* This schedule applies equally whether or not the biting animal has been previously vaccinated.

** See explanatory notes opposite.

† Course of vaccine to be followed by supplemental doses of vaccine of non-nervous tissue if possible, 10 and 20 days after the last usual dose.

Clinical Efficacy of Amphotericin B Lotion in the Treatment of Various Cutaneous Monilial Infections

• Twenty-two Patients treated showed excellent or fair results, with failure in only 3.

JOE C. TILLEY, M. D.*
Baton Rouge

UNTIL quite recently, mycotic infections of the skin were stubbornly resistant to all forms of antibiotic therapy. The advent of griseofulvin brought many of these dermatoses under control, particularly those caused by species of *Epidermophyton, Microsporum,* and *Trichophyton.*[1] Despite its success in some other cutaneous fungal infections, however, griseofulvin proved not only ineffective but often deleterious in cases of candidiasis.[1]

Encouraging results were first observed in cases of cutaneous moniliasis treated with nystatin.[3-5] Later when amphotericin B became available, this agent, too, was found to be effective in cutaneous candidal infections.[5, 6] Both of these fungistatic antibiotics were derived from streptomycetes discovered in a South American soil sample. Amphotericin B has the distinct pharmaceutical advantage over nystatin of being stable in aqueous formulations. This property permits preparation of a lotion formulation suitable for application to moist, intertriginous areas. Furthermore, amphotericin B is reported to be even more effective in cases of moniliasis than is nystatin.[5] The following investigation was undertaken to determine the clinical effectiveness of amphotericin B lotion.†

Materials and Methods

The 22 participants in this study demonstrated various cutaneous lesions, many of them refractory to all previous therapy. In 12 cases, *Candida albicans* was cultured from the lesions; in 9 others, a diagnosis of moniliasis was arrived at on clinical grounds, and, in one case, the causative organism proved to be *Trichophyton rubrum.* Among the areas infected with *Candida* were the feet, groin, inframammary, diaper, scalp, and in one instance, the angles of the mouth (perleche).

All 22 patients were treated topically with Fungizone Lotion in aqueous formulation containing amphotericin B, 3 per cent by weight, as the active ingredient. Patients were instructed to apply the lotion three times a day, and, in most cases, to employ no other medication.

Results

As indicated in Table I, amphotericin B lotion was highly effective in 12 cases (54 per cent), fairly effective in 7 cases (32 per cent), and effected no response at all in the remaining three cases (14 per cent).

In the three cases in which no response whatever was noted, one was shown to be tinea corporis due to *Trichophyton rubrum;* the other two were monilial infections of the feet. In one of the latter two cases the medication had to be discontinued because of secondary infection.

In none of the 22 cases were adverse effects due to the medication noted.

Discussion

With the development of amphotericin B it became possible, for the first time, to incorporate a fungistatic antibiotic highly effective against monilial infections in a stable, water-soluble lotion preparation. Such a vehicle offers obvious ad-

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† Supplied as Fungizone® Lotion by Dr. John T. Groel of the Squibb Institute for Medical Research, New Brunswick, New Jersey.

THE CLINICAL EFFECT OF AMPHOTERICIN B LOTION, 3% IN THE TREATMENT OF CUTANEOUS MONILIASIS

Diagnosis	No. of Patients	Basis for Diagnosis	Duration of Disease	RESULTS Excellent	Fair	Failure	Observations and Comments
Erasia interdigitale blastomycetica	3	Candida albicans cultured in 2	Months	2	-	-	Cleared in 7 days
		Clinical observation (1)	Months	-	1	-	50 % improvement, though patient unable to keep hands out of water
	3	Candid albicans	Years	1	-	-	Refractory to all earlier medications
		cultured		-	1	-	Cleared in 7 days Paronychia cleared more slowly
				1	-	-	Groin, axilla, inframammary cleared One hand (in water) did not clear Refractory to previous therapy
Monilial intertrigo	1	Clinical observation	Weeks	-	1	-	Slowly improved
	1	Clinical observation	Days	1	-	-	Cleared in 3-4 days
	1	Candida albicans cultured	Weeks	1	-	-	Cleared in 2 weeks
	1	Candida albicans cultured	Weeks	-	1	-	Cleared fairly rapidly
Monilial vulvitis	1	Candida albicans cultured	Weeks	1	-	-	Cleared in 10 day
Moniliasis of feet	2	Candida albicans cultured	2-4 Months	-	-	1	Medication disantinued because secondary infection occurred
		Clinical observation	Weeks	-	-	1	Failure after 3 weeks treatment
Moniliasis of nails	1	Candida albicans cultured	Months	-	1	-	Clearing began in 7 days, fair improvement in 14 days; still improving
Moniliasis, hands & feet	1	Candida albicans cultured	Months	1	-	-	Cleared 70 - 90 % Refractory to all previous therapy.
Moniliasis, nuchal	1	Clinical observation	Days	1	-	-	Cleared in 2 weeks
Moniliasis of toes with nail dystrophy; Paronychia	1 1	Candida albicans cultured	Weeks	-	1	-	Improved 50-60 % in 2 weeks
Perleche (with psoriasis)	1	Clinical observation	Years	1	-	-	Cleared in 1 week, No effect on psoriasis
Moniliasis of scalp (with seborrhea)	1	Clinical observation	Years	-	1	-	Medication fairly effective
Diaper rash	2	Clinical observation	Days	2	-	-	Rapid clearance, both patients
Tinea corporis	1	Trichophyton rubrum cultured	Weeks	-	-	1	No effect
Totals	22			12	7	3	

* Diabetic patients

vantages for the treatment of moist intertriginous areas. This lotion proved highly effective in 12 of the 22 cases included in this study. Most patients obtained symptomatic relief in a few days and were clear in seven to ten days. In two erosio interdigitale blastomycetica cases who showed improvement but did not clear compietely (one complicated by diabetes mellitus and concomitant moniliasis of the groin, axillae, and beneath the breasts), the patients' inability to keep their hands out of water was probably a contributing factor to the poor result. In the case complicated by diabetes mellitus, the affected areas were all cleared by the medication, with the exception of the one hand the patient was unable to keep dry. Two instances of diaper rash, one extremely severe, showed excellent response to the medication; and in one case of seborrhea of the scalp complicated by monilial infection of several years duration, some clearing was noted.

Summary

Twenty-two patients demonstrating various cutaneous monilial infections, many refractory to all previous therapy, were treated with amphotericin B lotion (Fungizone).

Excellent results were observed in 12 cases (54 per cent) ; fair results in 3 cases (32 per cent), and no response to the medication at all in the remaining 3 cases (14 per cent).

Amphotericin B in a lotion formulation is not only an exceptionally effective agent, but also appears free of adverse effects despite application over relatively extended periods.

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Legislation Against Side Effects?

The unexpected appearance of side effects in drug therapy has been and will be due not to inadequacy of laws but to the inadequacy of scientific knowledge. Protection against side effects cannot be legislated. There will always be instances where a drug will be prescribed, despite its side effects, because the alternative is worse. Every drug is to some extent toxic. Even the purest tap water can be harmful under certain conditions. A doctor must always weigh the disadvantages of a drug against the expected advantages. The best and most extensive legislation in the world will not help him in this decision. But restrictive legislation can tie his hands. The problem, I repeat, is not lack of legislation but lack of exact scientific knowledge.—Austin Smith, M. D., President, Pharmaceutical Manufacturers Association, to 16th Annual Convention, National Pharmaceutical Association, August 7, 1962.

Staphylococcal Pancarditis*

• Report of a case in a child with no antecedent heart disease.

JAMES L. REYNOLDS, M. D.
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Introduction

BACTERIAL endocarditis was almost invariably a fatal disease prior to the introduction of antibiotics. The spontaneous recovery rate in the subacute form of the disease was only 1 per cent. In 1944 Loewe, et al.[18] demonstrated the effectiveness of penicillin in this condition and shortly thereafter the immediate recovery rate in subacute bacterial endocarditis increased to 75 per cent. Currently, if a penicillin-sensitive *Streptococcus viridans* organism is the etiologic agent involved, there is a greater than 90 per cent expected survival.[9]

In contrast to this therapeutic success is the high mortality still associated with acute staphylococcal endocarditis. The staphylococcus is not so easily eradicated; infection due to this organism has the poorest cure rate of any type of endocarditis.[9] At present only 20 to 40 per cent of reported patients with this infection have a favorable outcome.[23, 5, 29, 7, 1] This prevails in spite of, and to a large extent because of, the wide variety of antibiotics currently available. In recent years staphylococcal endocarditis has increased in prevalence.[32, 31, 9] Many cases now occur following cardiovascular surgery. It is the most common type of acute bacterial endocarditis. In contrast to the *Streptococcus viridans* which regularly attacks a previously damaged valve, it is well recognized that *Staphylococcus aureus* may lodge on a perfectly normal heart valve.[22] The mitral valve is especially susceptible; it alone or in combination with the aortic valve is involved in almost 60 per cent of instances.

All types of bacterial endocarditis are rare in children. Cates and Christie[3] in a series of 408 patients with bacterial endocarditis found only 4 per cent less than 15 years of age. Keith, et al.[16] reported a total of only 35 children over 2 years of age with bacterial endocarditis seen over a period of twenty years. During this time there were 215,000 admissions to the hospital from which this series was reported. Eight of these 35 patients had staphylococcal endocarditis. Only 4 of the 35 had a previously normal heart. In another series[32] there were 16 children beyond 2 years of age with endocarditis seen over a fourteen year period; only 1 had no antecedent heart disease.

Endocarditis in the childhood age group is sometimes clinically divided into those under and over 2 years of age.[24, 16, 19] In the infant group the diagnosis of endocarditis is often not made since in one third no murmur is heard, pre-existing heart disease is uncommon (8 per cent), and infection in other organs and generalized septicemia usually dominate the clinical picture.

The following case report of a child with staphylococcus endocarditis involved what is believed to have been a previously normal mitral valve. This patient is of interest not only because of the rarity of his disease, but also because of the therapeutic problems he presented while in the hospital and which he continues to the present.

Case Report

History:

B.L., a 3 year old white male, was admitted to the Baton Rouge General Hospital on April 25, 1961, with the chief complaint of high fever for eight days. At the onset of his illness the

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From The Pediatric Clinic, 3347 Government Street, Baton Rouge, Louisiana.

patient was seen by his family doctor who found nothing on physical examination to explain the fever. Five days prior to admission he was again seen because of continued fever and a convulsion. This seizure was thought to have occurred on the basis of pyrexia. Penicillin was given intramuscularly. On the following day he was still febrile and was admitted to St. Joseph's Hospital in New Roads, Louisiana. There intramuscular penicillin therapy was continued and chloramphenicol was given by mouth. Due to continued fever without an explanation, he was referred for consultation.

Past History:

The patient had no past history of convulsions and no previous serious illnesses. He had been examined on several occasions by his doctor; a heart murmur had never been heard. There was no familial history or personal past history suggestive of acute rheumatic fever.

Family History:

There were 2 other children in the family. One, a 3 month old male infant, had furuncles and impetigo of the occipital area and neck at the onset of B.L.'s illness. These lesions were resistant to treatment with penicillin and a type 80/81 *Staphylococcus aureus* was cultured from one of these furuncles. The other sibling, a 4 year old boy had several "boils" three to four months before B.L. became ill. This sibling also had impetigo two months after B.L. was discharged from hospital. The mother's sister, brother and his wife all had furuncles at the time of the patient's illness. Five of the maternal uncle's 6 children also had "boils" during the same period.

Physical Examination:

Only the significant findings will be reported. The child was febrile, and appeared acutely ill. An impetiginous lesion was present on his chin; no other sites of skin infection were seen. No petechiae were present. There was no chest deformity. The heart was not clinically enlarged. Tachycardia was present, but no abnormal heart sounds and no murmur or friction rub were heard. The lungs were clear. No abdominal organomegaly was palpated. Neurological examination was unremarkable except for irritability. There was no evident cause for fever on the basis of the physical examination.

Initial Laboratory Examinations:

Hb—11.3 gm., W.B.C.—33,700, with 45 segmented and 12 band-form polymorphonuclear leukocytes, 1 eosinophile, 33 small lymphocytes, and 9 monocytes.

Urinalysis: acid, yellow-clear, sp.g—1.012, alb.—trace, sugar—neg., ketone bodies—trace, bile—neg., microscopic; 10-15 RBC and 4-6 WBC per hpf. CSF: WBC—1 mono., 1 poly., no RBC. Pandy—neg. Dextrose—86 mg. %. Culture—no bacterial growth. Febrile and Heterophile agglutinations — neg. Blood culture — *Staphylococcus aureus,* coagulase positive, isolated after one day incubation. Throat culture—*Staph. aureus,* coag.—pos. predominate. Rare col. *alpha strep.* Can-

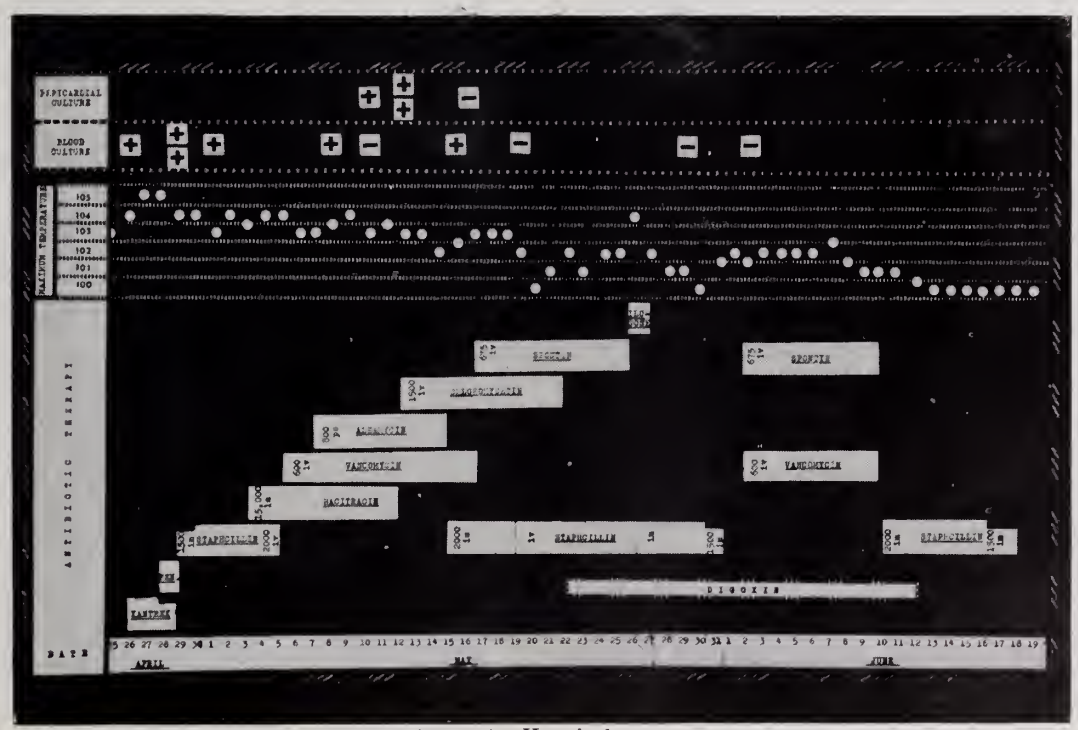


Figure 1—Hospital course.

dida-like yeast, also present. Chest x-ray—no evidence of pneumonia, normal size heart (St. Joseph's Hospital).

Hospital Course:

The day following admission the patient began to keep his right leg flexed; swelling of the anterior aspect of the right thigh with increased warmth in this area were noted. Osteomyelitis was suspected but x-ray examinations of the right femur at no time showed an osteolytic lesion. This swelling and tenderness persisted several days but subsided markedly ten days following admission. On the day following admission, after cultures had been obtained, kanamycin was begun (Figure 1). This marked the inception of a course of antibiotic therapy which eventually involved a total of 9 different antibiotics. These were given singly and in varied combination in an attempt to eradicate a *staphylococcus aureus* which was later phage typed as pattern 80/81. For a period of forty-eight days the patient exhibited high spiking fever and at times had concomitant chills. Some of this pyrexia, especially during several days toward the end of this period, was probably due to acute thrombophlebitis associated with intravenous administration of combinations of irritating antibiotics.

Four days after admission a heart murmur was first heard. During these four days the working diagnosis was possible osteomyelitis and septicemia. With the appearance of this apical,

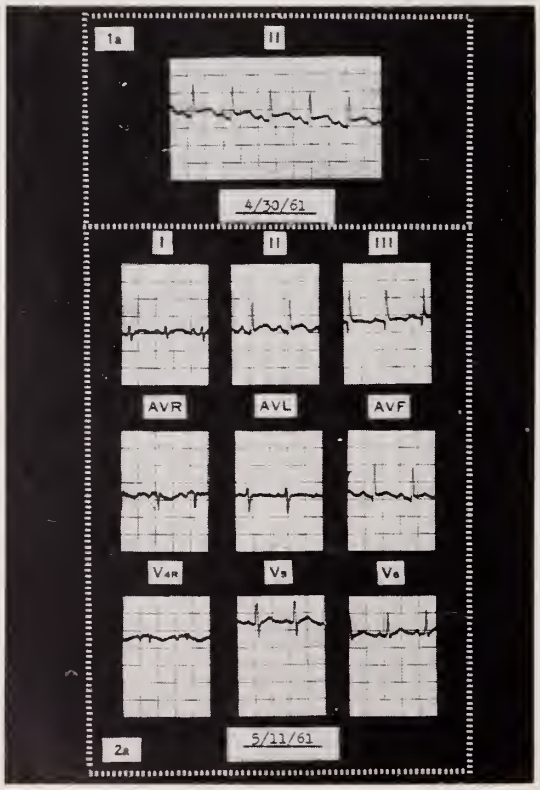


Figure 1a and Figure 2a.

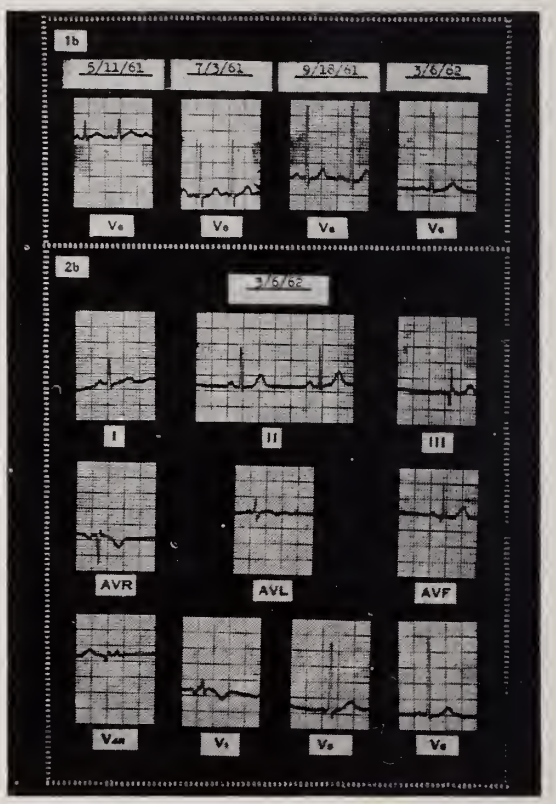


Figure 1b and 2b—Sequential change in voltage of R wave in V_6. Pericardial effusion was present on 5/11/61, but not thereafter.

regurgitant Grade III (of VI) systolic, blowing murmur, the diagnosis of acute bacterial endocarditis became obvious. On the following day, five days after admission, a pericardial friction rub was heard for the first time. ECG at this time (Figure 1a) showed slightly decreased voltage of the QRS complexes, the T wave was low in leads II and AVF, and there was marked eleva-



Figure 2—Slight globular enlargement is present (4/29/61).

tion of the ST segment in leads II, III and AVF. No ventricular hypertrophy was present (Figure 2a). Chest x-ray initially showed a normal size heart. On the day the murmur appeared, however, the heart was seen to be slightly enlarged and globular in shape (Figure 2). The cardiac silhouette continued to increase in size and by May 8, 1961, enlargement was pronounced (Figure 3). The patient had a septic fever, with pallor, tachypnea, tachycardia, profuse sweating, and hepatomegaly. Because of this decline and fear of impending tamponade, a subxyphoid pericardiocentesis was done. Approximately 100 cc. of sero-sanguinous fluid were removed. *Staphylococcus aureus* was grown from this fluid. A large amount of effusion persisted, however, and on May 12, 1961, a pericardiostomy was done. One hundred thirty cc. of serosanguinous, thin, turbid fluid were aspirated (Figure 4). The pericardium was markedly thickened and measured approximately 0.5 cm. in thickness. The visceral surface was reddened and granular. Microscopic examination showed proliferative pericarditis. Drains were placed, the skin left open, and an absorbent dressing applied. Bacitracin was used subsequently to irrigate the pericardial sac. Drainage occurred for several days, but gradually decreased and the operative site granulated in and closed. There was a marked diminution in the size of the heart shadow after pericardiostomy, but it remained enlarged (Figure 4). The patient was improved after the operative procedure.



Figure 3—Marked enlargement due primarily to pericardial fluid is present (5/8/61).



Figure 4—Immediately after pericardiostomy (5/12/61). The thick pericardial rind is seen. One can judge the contribution of pericardial fluid and the heart itself to the enlarged cardiac silhouette by comparing fig. 3 with fig. 4.

On May 22, 1961, it was thought that cardiac failure had intervened and the child was digitalized. Improvement was slight.

The patient continued to run fever in spite of the varied antibiotics employed. No new murmur appeared. The spleen enlarged but no petechiae were seen. On June 1, 1961, antibiotics were temporarily discontinued in order to determine whether the persistent fever was due to infection, drug fever, and/or thrombophlebitis from antibiotic administration. The patient spiked fever and had a chill. Redness and swelling of the distal phalanx of one finger occurred. Continuing infection was apparent and antibiotic combination of vancomycin and ristocetin was then instituted. This choice was based on tube dilution sensitivity studies of multiple drug combinations. These antibiotics were administered intravenously for eight days and then discontinued because of thrombophlebitis. The patient was started on methicillin, I.M., again, although positive blood cultures had been obtained previously during administration of this drug. Over a period of seven days the child remained afebrile. Methicillin was discontinued without recurrence of fever and the patient discharged.

B.L. was seen again in the office two weeks after discharge. He had had no fever in the interim, but had become nauseated and had vomited several times in the eighteen hours preceding his visit. On examination it was obvious that he was in severe, primarily left-sided, heart failure. A gallop rhythm, tachycardia, tachypnea, and pallor were present. Roentgenogram of the chest showed the heart size had increased significantly since discharge and was now markely enlarged. The murmur of mitral regurgitation persisted. (No signs of pericardial effusion were evident.) Digoxin, which had been discontinued just before discharge, was begun again. In spite of increasing dosage, heart failure progressed. In addition to the above findings, the liver enlarged to the umbilicus and slight peripheral edema appeared. Chlorothiazide was given along with a salt-poor diet. Seven weeks after discharge from the hospital the patient began to improve and after nine weeks he began walking again for the first time.

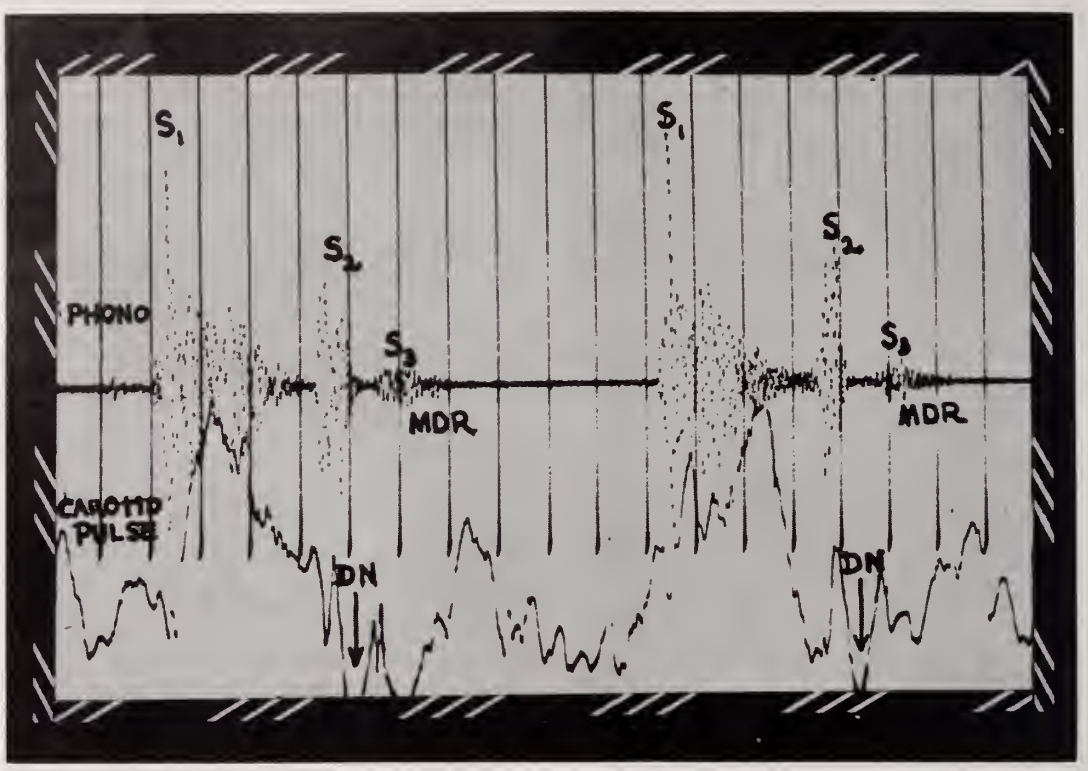


Figure 5—S_1, S_2 and S_3—heart sounds. MDR-mid diastolic rumble. DN — dicrotic notch. The systolic murmur is not labeled.

Chlorothiazide was discontinued. Persistent gradual improvement ensued. The patient was last seen eleven months after the onset of his illness. He was normally active at home, bright, alert, and had good appetite. There were no symptoms indicative of cardiovascular disease. On examination his color was good, pulses were of normal volume, and tachypnea and tachycardia had disappeared. The mitral systolic murmur, Grade IV (of VI) persisted and had become quite musical (Figure 5). Inspiratory splitting of the second sound had developed. The liver had regressed to the costal margin. He had gained 5½ lbs. over a seven month period. Chest x-ray showed some decrease in heart size, although cardiomegaly was still present, and the pulmonary vascular congestion had disappeared (Figure 6). An ECG showed further left ventricular hypertrophy by voltage (Figure 2b). An abnormally tall R wave in V_5 and V_6 had first developed about seven weeks after discharge from the hospital and concomitant with his initial improvement after going into severe failure (Figure 1b). Digitalis was continued.



Figure 6—Definite cardiomegaly persists. Left ventricular prominence is evident (3/6/62).

Comment

The source of this patient's staphylococcal septicemia was probably the skin lesion on his chin. Considering the number of such staphylococcal skin infections seen in pediatric practice, the complication of bacteremia and endocarditis must indeed be extremely rare. The occurrence of furuncles and impetigo, as mentioned, in several members of the patient's family emphasizes the familial epidemiology involved in resistant staphylococcal infection. A nasal carrier of the organism is

frequently found to be the source of the infections and the resistant strain is frequently acquired in a hospital.[31] The patient's younger brother, age 3 months, had multiple furuncles about the head at the time of onset of the patient's illness. Five injections of penicillin given by his doctor were ineffective in clearing this sibling's infection. *Staphylococcus aureus,* phage type 80/81, was isolated from one of the furuncles. This infant may well have acquired the resistant staphylococcus during his nursery stay. The patient's other sibling, age 4 years, also had multiple furuncles several months before the patient's illness.

It was not until twelve days after the onset of the patient's disease that endocarditis was diagnosed. An apical murmur appeared for the first time and then the diagnosis became obvious. This emphasizes the difficulty in making the diagnosis in the absence of a murmur. It is quite probable that the antibiotics given during the first twelve days of illness inhibited the growth of the organism sufficiently to permit the patient to survive and develop evidence of valvular damage. In the absence of antibiotic treatment the child might well have succumbed before endocarditis was suspected. Before the antibiotic era patients rarely died as a direct result of acute endocarditis per se, but succumbed to either overwhelming infection, embolization to the brain or lungs, or other underlying disease.[30] Antibiotics permit hemodynamically significant valvular abnormalities to develop. It is of interest that while on bacteriostatic antibiotics during the hospital course a progressively longer incubation period for the blood cultures became necessary in order to demonstrate growth of the organism.

Pericarditis in the course of bacterial endocarditis is unusual. Fisher, et al.,[8] found an incidence of 8 per cent, and Thayer[30] an incidence of 19.2 per cent. None of Horan's[13] 15 patients with staphylococcal pericarditis seen over an eighteen year period at Charity Hospital in New Orleans had associated endocarditis. Pericarditis apparently develops by secondary invasion from an adjacent small abscess or infected epimyocardial infarct.[26] A friction rub is less frequently found with purulent pericarditis than with other common types of pericarditis in which the incidence of a rub is 85 per cent.[16b] Keith, et al., found a rub in 15 per cent of 67 patients with purulent pericarditis; Horan[13] found a 47 per cent incidence among patients with staphylococcal pericarditis. There is some diversity of opinion regarding the proper management of purulent pericarditis—aspiration versus pericardiostomy. Most would favor the latter.[20, 21, 24b] Considering the large amount of fluid present in this patient (Figure 3), the fibrinopurulent character of the exudate, the thick rind of pericardium which had developed (Figure 4), and the resistant nature of the organism, pericardiostomy would seem the procedure of choice. The patient did improve clinically after this operation was done. Whether irrigation of the sac with bacitracin solution achieved anything or not is problematical. Irrigation with saline alone may be just as beneficial. Constrictive pericarditis is an infrequent sequela of purulent pericarditis,[28, 4] especially, if the infection is adequately treated and pericardiostomy has been performed. Only one case of constrictive pericarditis subsequent to acute pericarditis was found in the New Orleans Charity Hospital records.[13] This patient had been inadequately treated with antibiotics two years previously.

The treatment of staphylococcal endocarditis is difficult. One is aided by relatively early diagnosis of the disease and isolation of the organism. However, there is an immediate problem of the proper antibiotics to employ while awaiting the results of sensitivity testing. A staphylococcus is the likely etiologic organism in a patient with acute endocarditis, if there is a septic type of temperature curve and a high white blood cell count (greater than 15,000/cu. mm.[16]) A resistant organism can be suspected, if the source is likely to be a hospital strain of staphylococcus,

or one acquired in a family outbreak that has shown resistance to treatment. Poor response to previously administered antibiotics of course implies resistance and the need for more refined therapy. The disk sensitivity method ordinarily employed is unreliable, can be misleading, and often is worthless in guiding the therapy of endocarditis.[15] The disk test can only estimate the ability of a particular antibiotic to *inhibit* bacterial growth—bacteriostatic, not bactericidal, effect is assessed by this method. Endocarditis can not be cured by bacteriostatic drugs. In this disease one must employ either tube or plate-dilution sensitivity tests. These tests do estimate the bactericidal power of the antibiotic tested.[12, 9] In retrospect we delayed too long in employing this technique. The results of disk sensitivity testing in this patient demonstrated the fallibility of this method in selecting antibiotics for treatment of endocarditis (Figure 7). It was obvious from the results of the tube-dilution tests that no single antibiotic tested was bactericidal (Figure 8). It is generally agreed that for treating resistant staphylococcal endocarditis 2 drugs, each of which ideally is bactericidal for the organism, should be employed.[9, 6, 14] Jawetz[14] has recommended that the organism be tested against combinations of antibiotics for a possible combined bactericidal effect, if the antibiotics singly are not bactericidal.[14] This was done in our patient (Figure 8) and an effective combination was found. It would be difficult to hit upon such a combination by chance or therapeutic response alone. An excellent method of guiding choice of drug therapy and specifically drug dosage in endocarditis is that of testing the bactericidal power of the patient's serum while he is receiving the antibiotic against the patient's organism.[27, 9] The bactericidal power of the patient's serum is ultimately the paramount factor involved. This method was not utilized in the present case and fortunately was not essential. Most treatment regimens employ four to eight weeks of therapy, although short courses of antibiotics, usually of two weeks' duration, have been successfully used with responsive organisms. Our patient received only eight days of treatment, with vancomycin and ristocetin (Spontin®) given simultaneously. This was not by design, but because of thrombophlebitis which had developed in almost all of the major easily accessible peripheral veins. This extensive acute thrombophlebitis precluded further intravenous administration unless a deep vein were cut-down on. It was elected to stop the intravenous combination at this point, and fortunately duration of treatment had been adequate. It is doubtful that an adult patient could have been persuaded to tolerate the multiple venipunctures and thrombophlebitic episodes experienced by this little boy. An indwelling catheter in the inferior cava may be a preferable approach, but may not be without complication.

The severe cardiac failure which began two weeks after discharge from the hospital and which progressed in spite of digitalization and diuretic treatment is not an uncommon event after eradication of the infection in patients with endocarditis.[23, 25, 11, 26, 19] Failure developing after cure of the infection may be due to pro-

ANTIBIOTIC DISC	CULTURES											
	Blood						Pericardial			Throat		
	1	2	3	4	5	6	1	2	3		1	
Carbomycin					S	S		S	S			
Bacitracin		R	R	R	S	S	S	S	S			
Cleandomycin		R	R	S	S	S	S	S	S			
Vancocin		S	S		S	S	S	S	S			
Dihydro-streptomycin	R	R	R		R	R		R	R			
Maxipen	S					R						
Staphcillin	S	S		S	S	S					S	
Syncillin	S		R						S			
Ristocetin	S	S	S	S	S	S	S	S	S			
Kanamycin	S	S	S	S	S	S	S	S	S			
Chlortetra-cycline	R	R	R	R	R	R		R	R		R	
Triple Sulfa	R	R	R	R	R	R	R	R	R		R	
Furaltadone	S	S			S			S				
Demethylchlor-tetracycline	R	R	R	R	R	R	R	R	R			
Oxytetra-cycline	R	R	R	R	R	R	R	R	R		R	
Tetracycline	R		R	R	R	R	R	R	R		R	
Penicillin	S	R	R	R	R	R	R	R	R		R	
Novobiocin	S	S	S	S	S	S	S	S	S			
Erythromycin	R	R		R	R	R	R	R			R	
Chloramphen-icol	S	R		S	S	S	S	S	S		R	
Nitrofurantoin		S	S		S			S	S			
Neomycin					S			S				

Figure 7—Antibiotic disk sensitivity tests on *staphylococcus aureus* isolated from blood, pericardial fluid, and throat cultures.

TUBE DILUTION SENSITIVITY TESTS

ANTIBIOTIC	Blood Culture # 1			Blood Culture # 2	
	Partial Inhibition	Complete Inhibition	Bactericidal *	Complete Inhibition	Bactericidal *
Kanamycin	8u./ml.	16u./ml.	NO		
Vancocin		2u./ml.	NO		
Bacitracin	2u./ml.	4u./ml.	NO		
Chloromycetin	6mcg./ml.	10mcg./ml.	NO		
Staphcillin	2u./ml.	4u./ml.	NO		
Ristocetin				8u./ml.	NO
Penicillin & Chloromycetin				YES	NO
Chloromycetin & Spontin				YES	NO
Spontin& Vancocin				YES	YES
Chloromycetin & Spontin & Neomycin				YES	YES
Albamycin & Erythromycin & Spontin				YES	NO
Staphcillin & Vancocin				YES	NO
Penicillin & Streptomycin & Chloromycetin				YES	NO
Spontin & Erythromycin				YES	NO
Spontin & Neomycin				YES	YES

*Maximal final concentration for each antibiotic = 20u.(or mcg.) / ml.

Figure 8—Tube-dilution sensitivity tests on *staphylococcus aureus* isolated from blood culture.

gressive valvular damage, i.e., valvular fibrosis and retraction, perforation or aneurysmal dilatation of a cusp. Failure may also be associated with myocardial damage. Saphir[26] has emphasized the myocardial changes found in bacterial endocarditis: frank acute myocarditis, minute multiple infarcts, emboli, foci of necrosis and fibrosis, abscesses, and perivascular fibrosis. Whether this patient's postinfectious acute congestive failure was due to myocardial damage or the appearance of hemodynamically significant mitral regurgitation is uncertain. Coincident with the development of left ventricular hypertrophy, however, the failure improved. If mitral regurgitation is a major problem as defined by laboratory study, it is anticipated that mitral reconstructive surgery may offer considerable help. At present this type of surgery is somewhat experimental, but certainly rapid progress is being made.[33, 2] Hale[10] comments on the relatively favorable long-term prognosis of patients with mitral in contrast to the poor outlook with aortic involvement subsequent to bacterial endocarditis. Actually there is little written on the long-term effects and on possible surgical treatment and its indication in patients surviving acute bacterial endocarditis.

Summary

Staphylococcal endocarditis continues to have a significant mortality despite the array of antibiotics currently available for treatment. Although it has increased in prevalence, the condition is still rare during childhood. The disease profile is clinically dissimilar in the infant as contrasted to the older child. A 3 year old boy with phage type 80/81 *Staphylococcus aureus* endocarditis of a previously normal mitral valve is reported. This child also

had concurrent purulent pericarditis. In selecting antibiotics for treatment of endocarditis the inadequacy of the commonly employed disk sensitivity testing is stressed. Three extremely useful procedures are: (a) tube-dilution sensitivity study, (b) antibiotic combination testing, and (c) the patient serum-inhibition test. Pericardiostomy is judged to be the procedure of choice in decompressing a purulent pericardial fluid collection. The serious complications of endocarditis which may follow bacteriologic cure are pointed out and are exemplified in part by the reported patient. Surgical repair of valvular damage consequent to endocarditis is now realized as a therapeutic possibility.

Acknowledgement

We acknowledge with gratitude the assistance of Dr. Charles Beskin who performed the pericardiostomy and Dr. D. J. Guidry, consultant in Bacteriology, Touro Infirmary, New Orleans, who performed the tube-dilution sensitivity tests. We thank Dr. Robert Helm of New Roads, Louisiana for referring this patient to us for treatment.

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Louisiana State Board of Health Louisiana State Welfare Department Home Nursing Project*

• This is in the form of a preliminary report on eight months of a one year pilot study, covering seven Louisiana parishes, to determine the practicability of a statewide home nursing service by public health nurses for O.A.A. clients on the Louisiana State Department of Welfare rolls.

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New Orleans

Program Under Kerr-Mills Act

THIS program is a part of an over-all State D.P.W. plan to provide improved medical and other health services for Welfare recipients through funds made available from the Kerr-Mills Act, and would include, in addition to the home nursing service described in this paper, a medical vendor plan, hospitalization, drugs, nursing home care, and an M.A.A. (Medical Assistance to the Aged) program. This latter group constitutes oldsters who need support for medical care, without other Welfare benefits, therefore do not need certification as indigent.

The proposal of utilizing public health nurses in such a program, which is a radical departure at least in this part of the country from their traditional preventive services, originated with the medical director of the Louisiana State Welfare Department (originally a public health physician in Louisiana), and our acceptance was based on the following general considerations. First, since organized medicine as represented by the American Medical Association nationally, and the State Medical Society in Louisiana, have endorsed the Kerr-Mills approach to the medical care for the aged problem in this country, we in the official public health agencies should make every effort to cooperate with our medical colleagues in these programs. Furthermore we have always personally advocated, that only through such *mutually acceptable cooperative efforts at the local level, can we hope to solve community health problems without federal or other outside intervention.* Secondly, we realized that if we did not agree to provide this much-needed service to our needy oldsters in Louisiana, the public prestige of the Louisiana State Board of Health as the major official health agency in the state, would be appreciably lowered. Furthermore, and even more important, these nursing services would eventually be set up either through another official agency, such as D.P.W., or private contract sources as V.N.A. (Visiting Nurses Association), thereby further fragmenting an already badly splintered health and medical service picture in our state. Also, this type service may well save unnecessary hospitalization, nursing home care, etc., in marginal cases.

The project, which began July 1, 1961 was originally set up for a six months study and subsequently extended for two additional three months periods, first to obtain additional data and secondly at the

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* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, May 9, 1962, Monroe.

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request of the State Board of Health, is financed through a special federal grant obtained through the Louisiana State Department of Public Welfare. Upon its completion the results will be submitted through the project Advisory Committee, made up of state representatives of both Health and Welfare, to the agency heads of Health and Welfare and their respective boards for consideration as a statewide program.

Basic Agreements

There are certain basic agreements which were decided on and included in the original project plan and were sent out to the seven project parishes as policy and operational guides at the beginning of the program. The parishes were first chosen on a random geographical basis, thereby giving a true statewide picture of possible area variables in the needs for this type service. This also provided an equitable as well as concentrated consultant service from the four Local Health Services generalized regional nurse consultants. The special nurse State Coordinator for the project was assigned to the Division of Nursing. Other criteria used in the selection of the parishes was availability of regular medical supervision from our own full time health unit directors. One parish was chosen because of the high per cent of colored clients on the local Welfare rolls, another because of an equally high per cent of white recipients, two are very rural areas, one highly urban, one with a balance of rural-urban characteristics, and so on.

Other ground rules established that might be of interest to this group were: That outside of unavoidable emergencies, this would not be a night or week-end service on the premise that such cases should be in a hospital, nursing home, or a similar type institution. A list of the type cases that would be accepted, and a few that *would not be* eligible for the service, was prepared and sent out to the health unit nurses in the pilot parishes, this was also included in the informational package of material that was mailed to all physicians in the seven parishes for personal presentation and explanation to them prior to inaugurating the service on July 1, 1961.

Method of Referral

The method of referral received a great deal of careful consideration and it was mutually agreed that under no circumstances would the public health nurse enter into the physician-patient relationship except at the doctor's request. So, one of the basic records that was developed for the program was a "Physician Request for Service" form. One investigational visit is permitted through community referral, after which the local Welfare worker must arrange for physician services for the case and the nurse then takes orders from the physician, preferably on a service order form which is provided and similar to ones that are used in a hospital for this purpose. It was further agreed that this would not be a specialized nursing service. Any new nurses added would along with the original staff, do both public health and home nursing. Further details of pre-planning, which extended over several months, were participated in not only by the Project Advisory Committee but also by the state regional and local staffs concerned from both agencies, are available and will be incorporated in the final report. Also, and every effort was made to keep this down to a minimum; only five forms or service records were finally decided on for use by the public health nurses. Of these, the Service Rendered Report is the most important. This form lists twenty-five different nursing procedures that the nurse might be ordered to give to the patient, and it also includes consultation time, travel, etc., as well as a catch-all column labeled "other". The record is conveniently arranged for check-type tabulation, and the nurse records the time spent on each service to the nearest ten minute interval. These forms are then mailed to the Board of Health state office for tabulation and analysis, and are the basis for a major part of the data used in this report.

Another Purpose of Study

Another purpose of the study was to provide answers and guides to certain professional and administrative problems that apparently are not available at this time, at least, that is what we have been told by individuals who have had some experience in this field at two recent national meetings on the subject of medical care for the needy. For example: Can a public health agency from an administrative as well as sound fiscal standpoint provide such a program on a fee-for-service contract? Organizationally and traditionally it would be impractical for the Board of Health to provide such a service on this basis in Louisiana at the present time. Also, what is the potential case-load that a nurse can carry with this type patient? We could then translate this information into how many nurses might be added for the entire state.

The problem is not as simple as it may appear. A nurse-case ratio is the most desirable from the health agency standpoint, particularly at the local level, but to arrive at this ratio, and more important, to satisfy federal reporting requirements, fee-for-service as well as hourly and case-cost data are necessary. Such information will be needed to arrive at an initially sound contractural arrangement for any statewide program.

Other questions that we are attempting to find some answers for are: Will there be sufficient nurses, parish by parish, to fill the needs of this program, or will we have to utilize other categories such as practical nurses or aides? What is the eventual potential total caseload? We know that of the over 241,000 population over 65 years of age in Louisiana, approximately 126,000 are on Welfare. A further breakdown of these recipients, by parish, is available. Can we use as an index of possible demand the present approximately 6 per cent of these oldsters who are receiving medical vendor services? Or, is the higher average morbidity rate quoted by the National Health survey of 10 per cent for those over 65 years of age, sick at any one time, more practical? Finally, one of the most challenging questions of all—how can we estimate the physician's response to this program? It is already quite obvious that we are encountering extremely wide variations of medical reaction to this project. In one of the parishes selected no physician requests were received in the first three months of the program, however, after the first few cases they became quite enthusiastic about the service.

It might be of interest to note at this point that for the project we assigned new nursing staff in the pilot parishes at a nurse per case ratio of one new nurse for every 1000 O.A.A. clients on the local Welfare rolls. The rationale being that this was double (1:2000) on what has been traditionally recommended for public health nursing services in a home nursing program, and this would give a safe working margin particularly in areas where the existing nurse case load was already heavy.

Administrative and supervisory costs are being carefully evaluated; (15 per cent was added to the original project estimate since this is the average in our present local health unit operations). Before and after public health case-load determinations for each nurse in the project parishes is also being done to determine the eventual impact on the regular public health nursing services. Orientation and training experiences in bedside care, rehabilitation, etc., were arranged for the nurses through such facilities as V.A. Hospitals, etc., to aid them in the program, and a guide for home nursing services is in the process of development.

Tabular Material

The following is a brief analysis of the tabular material that has been prepared from the reports that have been submitted on this service from the seven participating parishes:

The first form Table 1 is a sample of the Service Rendered Report, which as already mentioned is basic to this entire study. It is a record of an actual nursing visit to an 80 year old white male, in one of

TABLE 1

EXHIBIT I

SAMPLE OF SERVICE RENDERED REPORT

FRONT

LOUISIANA STATE BOARD OF HEALTH
HOME NURSING CARE - SERVICES RENDERED REPORT 08

LAST NAME	FIRST NAME	IDENTIFICATION NUMBER
F[redacted]	A[redacted] B.	20-A-001420

A: ADDRESS	PARISH OF RESIDENCE	RACE	SEX	AGE
Rt. 4, Box 56, Ville Platte, La.	Evangeline	W	M	80

DATE SERVICE RENDERED	NEW CASE / REVISIT	NATURE OF ILLNESS (New Case Only)	NAME OF REFERRING PHYSICIAN (New Case Only)
MO. 3 DAY 7 1962	XX / ☐	CVA-Diabetes	Dr. R. A. Fontenot

B: TYPES AND TIME OF SERVICES RENDERED

CHECK	TYPE	TIME HRS.	TIME MIN.	CHECK	TYPE	TIME HRS.	TIME MIN.
	01. BATH				11. INSULIN AND URINE TESTING		
	02. INJECTION				12. EXERCISES		
	03. ENEMA				13. ISOLATION CARE		
	04. TUBE FEEDING				14. B. P. AND T. P. R.		
X	05. INDWELLING CATHETER 2.98	1	00		15. IN AND OUT OF BED		
	06. CATHETERIZATION				16. VENIPUNCTURE		
	07. ULCER CARE			X	17. SPECIAL SKIN CARE 1.00		20
	08. INSTRUCTION IN DIETS				18. OTHER (SPECIFY)		
	09. COLOSTOMY CARE				19. OTHER (SPECIFY)		
	10. DRESSING OR COMPRESSES				20. OTHER (SPECIFY)		

E: COMMENTS: (Record time to closest 10 minutes intervals)

C: OTHER RELATED TIME AND EXPENSES

CHECK		MILES	TIME HRS.	TIME MIN.	COST
X	21. TRAVEL	14		30	.98 1.49
X	DR 22. CASE PLANNING AND CONSULTATION	xxxxxxx		30	xxxxxx 1.49
X	23. CASE READING AND RECORDING	xxxxxxx		10	xxxxxx .50
X	24. SUPPLIES USED: PURCHASED BY PROGRAM	xxxxxxx	xxxxxxxxx		2.37
	25. OTHER (SPECIFY)				

D: DISPOSITION OF CASE

		DATE
X	1. WILL REVISIT	
	2. DIED	
	3. CLOSED (SPECIFY)	

2:30 - # 746

02 Margaret Landrenean, R.N.
NAME OF NURSE GIVING SERVICE

S-61-5M-LHS. 33

BACK

3-7-62 -
New case - Rx referral -
Pt. was discharged from hosp.
3-6-62 - Has an indwelling
catheter - Doctor ordered this
nurse demonstrate irrigation
to daughter - output very
copious until - much tan thin
stools - Blood noted in drainage
Tube - Dr. called before
irrigating - explained that
more fluids could be forced.
She is on a diet, Taste aversion
daily - Urine is also checked
by daughter - She is learning
to irrigate - Pt. is receiving
Concentrated attention -
Condition is poor - pulse 60 -
very weak, irregular and
Thready - Apathetic easily - Daughter
is aware of condition -
I carpets syringe 1.71
drainage tube 43 supplies.
glass connecting tip .23 M.L.
2.37

the project parishes. The diagnosis was CVA and diabetes, and the attending physician requested, as indicated on the nurse's notes which are recorded on the back of the form, not only patient care but also specific instructions for a demonstration to a member of the family. It also shows that the nurse contacted the doctor relative to further guidance for a special problem encountered during her

TABLE 2
HOME NURSING CARE PROJECT
TABULATION BY PARISHES
SHOWING CASES—VISITS—TIME—COST
SUMMARY FOR JULY, 1961-FEBRUARY, 1962

Report No. 1

Parishes	No. of Cases Adm.	No. of Cases Disc.	Net Case Load End Feb.	Accumulated Total Cases Visited Each Month	Total Number of Visits	Average Visits Per Case Per Month	Total Miles of Travel	Total Nurse's Time	Average Time Per Visit	Total Cost	Average Cost Per Case Per Month	Average Cost Per Visit
Calcasieu	197	142	55	412	582	1.4	8286	916:40	1:35	$ 3,311.69	$ 8.04	$5.69
Evangeline	127	22	105	489	769	1.6	9463	1061:30	1:23	3,825.68	7.82	4.97
Madison	56	16	40	207	281	1.4	1854	316:20	1:08	1,072.45	5.18	3.82
Red River	52	8	44	180	329	1.8	3948	551:50	1:41	1,920.83	10.67	5.84
St. Tammany	62	13	49	120	246	2.0	2698	398:30	1:37	1,376.39	11.47	5.60
Washington	101	24	77	375	782	2.1	5917	947:00	1:13	3,236.25	8.63	4.14
West Feliciana	8	2	6	15	40	2.7	647	74:30	1:52	267.30	17.82	6.68
TOTAL	603	227	376	1798	3029	1.7	32813	4266:20	1:25	$15,010.59	$ 8.35	$4.96
TOTAL COST OF HOME SERVICE							$2,296.91	$12,713.68		$15,010.59		$4.96

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initial visit. Time spent on the case, care, travel, consultation, etc., are computed in time as well as cost on each form.

Table No. 2 is self-explanatory and shows that 603 patients were admitted the first eight months of the program. Each case received an average of 1.7 visits per month, and the time spent during each visit was 1.25 hours. Case costs averaged $4.96 per individual visit, with monthly cases costs being $8.35. It should be noted that since the tabulation of the eight month data presented in this paper, administrative expenses have been prorated into these results, and the final per visit cost has been agreed on at a level of $5.25.

Table No. 3 represents an itemized analysis of the Service Rendered form. Numerically and percentage-wise, blood pressure, evaluation, temperature, pulse and respiratory readings are the most frequently requested services, exclusive of

TABLE 3
HOME NURSING CARE PROJECT
TABULATION BY SERVICES
SHOWING AVERAGE TIME AND AVERAGE COST PER SERVICE
JULY, 1961-FEBRUARY, 1962
Report No. 2

Code	Type of Service	Number of Services	% of Services	Time	Cost	Average Time Per Service	Average Cost Per Service
01	Bath	142	2.0	96:50	$ 288.56	:41	$2.03
02	Injections	473	6.6	148:20	442.03	:19	.93
03	Enema	23	0.3	13:50	41.22	:36	1.79
04	Tube Feeding	11	0.2	5:30	16.39	:30	1.49
05	Indwelling Catheter	84	1.2	51:00	151.98	:36	1.81
06	Catheterization	8	0.1	4:30	13.41	:34	1.68
07	Ulcer Care	58	0.8	23:40	70.53	:24	1.22
08	Instructions in Diet	1,141	16.0	338:50	1,009.72	:18	.88
09	Colostomy Care	13	0.2	5:20	15.89	:25	1.22
10	Dressings or Compresses	120	1.7	58:10	173.34	:29	1.44
11	Insulin and Urine Testing	269	3.8	70:50	211.08	:16	.78
12	Exercises	454	6.4	153:20	456.93	:20	1.01
13	Isolation Care	3	0.0	:40	1.99	:13	.66
14	B.P. and T.P.R.	1,525	21.3	316:40	943.67	:12	.62
15	In and Out of Bed	249	3.5	80:40	240.39	:19	.97
16	Venipuncture	30	0.4	8:00	23.84	:16	.79
17	Special Skin Care	545	7.6	156:10	465.38	:17	.85
18	Other Specify	1,566	21.9	536:10	1,597.78	:21	1.02
19	Other Specify	367	5.1	97:50	291.54	:16	.79
20	Other Specify	58	0.8	13:30	40.23	:14	.69
25	Other Specify	8	0.1	2:40	7.95	:20	.99
	TOTAL HOME SERVICES	7,147	100.0	2,182:30	$ 6,503.85	:18	$ .91
	TRAVEL (number of times) (includes miles & time)	2,777		1,082:20	$ 5,522.27	:23	$1.99
	CASE PLANNING AND CONSULTATION	1,224		471:20	$ 1,404.57	:23	$1.15
	CASE READING AND RECORDING	2,137		530:10	$ 1,579.90	:15	$ .74
	TOTAL SERVICES	13,285		4,266:20	$15,010.59	:19	$1.13

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TABLE 4
HOME NURSING CARE PROJECT
TABULATION OF NEW CASES BY NATURE OF ILLNESS
SEX, AND AGE GROUPS
JULY, 1961-FEBRUARY, 1962 Report No. 3

Code	Nature of Illness	Cases		Total By Sex	Age Groups						
		Total	Percent		65-70	71-75	76-80	81-85	86-90	91-95	96 & Over
	TOTALS	603	100.0		118	96	145	142	70	23	9
				M							
01	Tuberculosis			F							
02	Other inf. and			M							
	par. diseases	1	0.2	F 1	1	1	1				
				M 18	5	2	4	5	2		
03	Cancer	45	7.5	F 27	10	5	4	6	2		
				M 14	2	7	4	1			
04	Diabetes	52	8.6	F 38	9	8	15	6			
05	Aller. end. metab. &			M 3				3			
	nut. diseases	7	1.2	F 4	1	1		1			1
06	Blood & blood form-			M 1				1			
	ing organs	3	0.5	F 2	1		1				
				M 2	1				1		
07	Mental	3	0.5	F 1	1						
				M 37	7	7	4	9	7	2	1
08	Vascular lesions	93	15.4	F 56	10	11	21	12	2		
09	Other diseases of										
	the nerv. sys. &			M 16	5	2	2	6	1		
	sense org.	37	6.1	F 21	5	4	3	3	3	3	
				M 28	2	3	7	9	6		1
10	Heart	109	18.1	F 81	19	11	18	24	8	1	
11	Other diseases of			M 17	3	1	3	5	2	3	
	circulatory	77	12.8	F 60	10	10	13	15	6	4	2
				M 8		1	5	1	1		
12	Respiratory	15	2.5	F 7	2	1	3		1		
				M 8	2	1	3	2			
13	Digestive	19	3.1	F 11	4	2	2	2	1		
				M 14		3	2	6	3		
14	Genito-Urinary	18	3.0	F 4		1	3				
15	Diseases of the skin			M 1		1					
	and cellular tissue	3	0.5	F 2			1			1	
16	Bones and organs			M 1						1	
	of movement	8	1.3	F 7	2		2	3			
				M 18	1	1	5	4	6		1
17	Senility	44	7.3	F 26	1	1	3	3	13	3	2
				M							
18	Fall	8	1.3	F 8	1	1	3	2	1		
				M							
19	Burn			F							
20	Other types of			M 3	1		1	1			
	accidents	19	3.1	F 16		4	2	4	3	2	1
				M 8	2	1	2	2		1	
21	Arthritis, Rheumatism	32	5.3	F 24	8	3	8	2	1	2	
				M							
22	Other handi-conditions	3	0.5	F 3	1		1	1			
				M 2	1	1					
23	Other types morbidity	7	1.2	F 5	1	1		3			

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the broad category of "other services", which is receiving further study, since obviously there are limitations on the number of items that can be listed for mechanical tabulation. Total cost data for each type of service parallel's these figures. Average time for services rendered is eighteen minutes with a low of twelve minutes for B.P. and T.P.R. readings and a high of forty-one minutes for baths. Costs of services average .91 cents from a high of $2.03 for baths and a low of .62 cents for B.P. and T.P.R. readings.

Table No. 4 is again self-explanatory and can be utilized at periodic intervals to analyze the type of case that is being admitted for service according to nature of illness, by age and sex grouping. Almost 50 per cent of the cases are being admitted in the 76-80 and 81-85 age groups, the more than 30 patients over age 90 are also of some interest. Not too surprising is the fact that items 08, vascular lesions; 10, heart and 11, other diseases of the circulatory system constitute practically one half of the total admissions. Somewhat surprisingly, items 21 and 22, arthritis, rheumatism and other handicapping conditions were not too numerous, however these could well have been secondary conditions to other diagnoses.

Table No. 5 represents an analysis of the case admissions by race, sex and age. The median age of 79, and the high percentages in the 76-85 age group and the 91 and over category, is rather convincing evidence that this is a service for the "oldsters" in Louisiana. The white and nonwhite ratio of approximately 2:1 is of considerable interest, and the preponderance of female patients 67 per cent, adds to the accumulating evidence from other survival statistics about, "just who is the hardiest sex".

Remarks

This paper represents a preliminary report and evaluation of a pilot study by the Louisiana State Board of Health in the practicability of a public health home nursing service in a medical care program for the needy.

We would at this time like to express our personal appreciation to Mrs. Vera Blanchard, R.N., Project Coordinator, and Mr. John Lemasson, Chief of the Tabulation and Analysis Section, Louisiana State

TABLE 5
HOME NURSING CARE PROJECT
NEW CASES
BY RACE, SEX AND AGE GROUPS
JULY, 1961-FEBRUARY, 1962 Report No. 4

	Totals	Age Groups						
		65-70	71-75	76-80	81-85	86-90	91-95	96 & Over
White								
Male	129	19	22	32	34	16	4	2
Female	267	56	45	67	59	27	8	5
SUB-TOTAL	396	75	67	99	93	43	12	7
Non-White								
Male	70	13	9	10	21	13	3	1
Female	137	30	20	36	28	14	8	1
SUB-TOTAL	207	43	29	46	49	27	11	2
TOTALS	603	118	96	145	142	70	23	9

WHITE = 65.7% MALE = 33.0%
NON-WHITE = 34.3% FEMALE = 67.0%

MEDIAN AGE 79.0 YEARS

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Board of Health, for their contributions to this time study.

Discussion

W. Carroll Summer, M. D., M. P. H.* (Monroe): I would like to discuss the O.A.A. bedside nursing trial project from a local level since Dr. Hedmeg has discussed this program in the seven Louisiana parishes on an overall basis. I have been the Consultant to the Madison Parish Health Unit since the trial project started in July, 1961.

Madison Parish has a population of 16,687, of which 5,845 are white and 10,842 are non-white. It is considered a rural area. There are 1,677 persons over 65 years of age in this parish. Of this number 1,196 are receiving old age assistance through the Welfare Department. There are five local practicing physicians, all of whom are located in Tallulah, the Parish seat. The only large industry is a lumber mill which employs about three hundred men.

This has been a cooperative project with the doctors, the Welfare Department and the Health Department. The Department of Public Welfare has financed the program. The Health Department has assumed the responsibility of rendering the bedside nursing care, using our public health nurses. The local doctors have assumed the responsibility for the treatment of these patients and the nurses carry out the doctor's orders—56 O.A.A. recipients have been referred for nursing care over a nine month period, but the case load has averaged about forty at any one time. Some cases have been transferred to nursing homes and some have died.

The doctor-patient relationship has been maintained and the program is kept under medical rather than lay direction and supervision. The doctors still have complete control over the patient and responsibility for the medical treatment. The nurses discuss treatment plans with the doctor and follows his orders. If appliances such as wheel chairs, crutches, walkers, hospital beds, etc. are needed they are purchased by the Welfare Department. The public health nurse visits the patient as often as needed. Only patients in their homes are visited. Once they are transferred to a hospital or nursing home, then the patient is dropped from the home visiting service. The nurses attempt to rehabilitate the patient to take care of himself as much as possible. If an attendant is present, instructions are given by the nurse as to how and what to do for the patient. Old people, especially sick ones, often feel isolated, unloved and forgotten.

To cite a few examples of what has been done in Madison Parish: in one instance the husband with suggestions from the nurse, designed and built a lifter for his wife who had been bed ridden for five years. Now she sits up in a wheel chair. The doctor is taking another look at her case. Another example is that of an old woman who broke her leg. Crutches were obtained for her but she would not use them because she was afraid of falling and breaking another bone. She needed professional advice and support which was given when the nurse visited her. The nurse recommended a walker which the Welfare Department purchased. She used this for a while and now walks alone. Actually, the nurse taught her to walk again. Another instance is that of a patient who had many bed sores caused by poor nursing care. The Health Nurse taught the attendant good nursing care and how to make the patient more comfortable. If this resource had not been available, the patient would no doubt have been placed in a hospital at considerable expense to the tax payer.

This program is designed to make the aged more comfortable and able to take care of themselves in so far as they are physically able. It shows them that someone is interested in their welfare when they become ill and helpless. It shows them that they are not forgotten in their old age.

In my opinion, this project in this parish has demonstrated that adequate medical and nursing care through the Kerr-Mills bill can be given to our old people and that no other program for the care of the aged is needed at this time, if this program were adopted on a state-wide basis.

* Director, Ouachita Parish Health Unit, Monroe, Louisiana; Acting Director, Morehouse Parish Health Unit, Bastrop, Louisiana; Consultant, Madison Parish Health Unit, Tallulah, Louisiana.

Eye Examinations for Louisiana State Drivers Licenses*

• This study is limited to the visual acuity requirements and the testing of visual acuity in the required examination for drivers' license as administered in the State of Louisiana.

EUSTIS D. WILSON, M. D.
Alexandria

Scope of Study

SINCE the Authorities of the State are primarily concerned with visual acuity and not with the causes of deficiencies of visual acuity found in applicants this study loses some of its value from a purely ophthalmological standpoint, but as citizens interested in reducing the highway death toll, it is of utmost value.

Visual Requirements or Acuity Standards

Without glasses the applicant must identify 20/40 or better in each eye to pass.

With glasses the applicant must identify 20/40. He is then restricted to driving with glasses.

The "one eyed" individual must have 20/40 vision in the useful eye with or without glasses. If he wears glasses he is then restricted to driving with glasses.

Subjects blind in one eye should be thoroughly instructed as to the handicap and means of compensating therefor.

Applicants failing to pass the above requirements may be referred to an "Eye Specialist" for corrective measures if such care would improve vision.

After such corrective measures have been applied a certificate from the specialist as to visual acuity is required. If the acuity meets the 20/40 standards the license is issued. If the acuity falls between 20/40 and 20/70 in the best eye, a limited license may be issued. This limits the driver to daylight driving only.

Applicants failing all previously stipulated requirements, but achieving 20/100 or better in each eye, either with of without glasses may at the discretion of the examiner be considered for very limited driving, such as, use of minor rural roads, short distances, limited speeds and at periods of minimum traffic during daylight only. These are very special cases for which there are no standards, each case requires individual study with careful evaluation of all factors related to safe driving.

It is interesting to note that a visual examination for renewal of licenses is required in less than one half the States. The requirement for corrected vision ranges from 20/30 in Mississippi to 20/70 in Idaho, Maryland, Massachusetts, Ohio, Texas, and Virginia.

Tests and Testing Equipment

The standard testing equipment in Louisiana is the Number 50 Driver Vision Telebinocular, manufactured by the Keystone View Company. This equipment comes with eight sterioptic cards.

Card number one has a yellow horizontal line presented to the left eye and a vertical row of five objects and numbers presented to the right eye. This card tests vertical imbalance. This card is not normally used.

Card number two presents to the left eye an arrow pointing upward, and to the right eye a horizontal row of dots and numbers reading from left to right from one to fifteen. This card detects horizontal imbalance. This card is not routinely used.

Card number three presents to the left eye a white dot with a blue dot immediately under it and to the right eye a white dot,

* Presented at the Eighty-second Annual Meeting of the Louisiana State Medical Society, May 9, 1962, Monroe.

corresponding to the one on the left, and a red dot immediately above it. This tests fusion power. This card is not routinely used.

Cards four, five and six: These cards are for testing binocular vision. They are composed of a series of signs along a railroad bridge. These signs have five rectangular figures on each, with small black dots at various locations in the rectangles. Card four presents the dots to the right eye. Card five presents the dots to the left eye and card six presents the dots to both eyes. These cards are used frequently.

Card seven tests depth perception. It contains a series of stars, squares, crosses, hearts and dots. There are five objects in the horizontal lines and six in the verticals. The objects are black on a yellow background. These test objects are so placed that some of them stand out at varying distances in front of the others. This card is not routinely used.

Card number eight is a standard visual acuity chart, designed as road signs. It has a conversion table comparing it to Snellen ratings printed on the test sheet.

Reading the first sign equals 20/100 Snellen. The second sign is 20/60, the third sign is 20/40, the fourth is 20/28, the fifth has two values 20/25 and 20/22, the sixth equals 20/20. There are three additional signs reading 20/18, 20/17, and 20/15.

This card is routinely used in all tests. Anyone failing to meet the previous stated standards is then referred to an "Eye Specialist" meaning an M. D. or O. D. as he desires. In any case he must secure a report from the professional person visited.

Result of Program

In the files in the Department of Public Safety, Baton Rouge, there is evidence of the value of this testing program.

As of this date there are over one million 600 thousand active driver's permits in the state. Of those applying, 5 per cent have been rejected because of visual deficiencies. (Incidentally this 5 per cent figure applies Nationally.) Thus, we see that roughly about 10,500 persons with various visual defects have been refused driver's permits. We must assume that these persons either were driving or had all intentions of driving since they applied for licenses. Now let us make an assumption; suppose we gathered here, in Monroe, would suddenly have to drive to Shreveport and all 10,500 of these persons, with defective vision, whose permits were revoked were still driving and all on the road between these two cities. I feel sure there are not enough doctors, nor hospital facilities, or funeral homes in the area to take care of the dead and injured, that would result from accidents caused by these persons. You may not agree with confining these 10,500 persons to such a small area, but you *must* agree that they would be driving almost every day within the boundaries of our State. To illustrate the point, this study was prompted by several persons, referred to me, who had from two to four accidents during a three month period. When examined these patients had 20/100 or less in each eye. They did not voluntarily surrender their permits, nor had they been revoked, simply because their required birthday had not come around since the last license was issued. Fortunately in each case no death had occurred but thousands of dollars in damage had been done and this is what keeps insurance rates up.

Not all applicants rejected for poor vision give up easily. Much political pressure is brought upon the authorities to re-issue some of the revoked licenses. I am happy to say that they have stood firm where evidence of poor vision was verified.

Summary

1. We have learned that visual acuity requirements vary widely in States. This suggests that some standardization be undertaken.

2. The State of Louisiana is among those with the highest standards.

3. The authorities are provided with simple, but adequate testing devices. They refer those failing the test for professional help, if possible.

The author wishes to express his deepest appreciation to the officials of the Department of Public Safety for their full and complete cooperation in this study.

Chemotherapy in Cancer Control

It seems to me that the incidence of neoplastic diseases will not likely decline of its own accord. Thus we may look ahead to the need for even greater efforts from all the disciplines of science before we can hope to reach this goal. The fact that chemistry will have an important role in this dramatic achievement is quite apparent. All of us interested in this approach to the problem must be increasingly aware of the varied contributions chemistry will make in solving the riddle of neoplastic growth and in treating its disease manifestations. It will be of benefit to our professions and to the goal we seek if all of us become as familiar as possible with current developments as chemistry assumes an ever more important place in achieving the complete control of cancer. — John R. Heller, M.D., President, Memorial Sloan-Kettering Cancer Center, in **The Percolator**, Feb.-March 1962.

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Editorial

Infection With Unclassified Mycobacteria

There are certain acid-fast organisms to which the name "unclassified mycobacteria" has been given. They are acid-fast and distinct from *Mycobacterium tuberculosis,* and also, distinct from Hansen's bacillus, on the one hand, and the various species of nocardia, on the other. Other names used for these organisms have been: anonymous, atypical, and at times, saprophytic.

Two articles in this Journal in recent months have called attention to their importance in this area.[1, 2] In addition to these articles, a review by Chapman[3] gives a comprehensive view of the problem.

The existence of these organisms has been known for several decades. The knowledge of their clinical importance has developed as a result of the two circumstances, which came at about the same time. One was the practice of routine culture for acid-fast organisms and the other the development of relatively safe technics of pulmonary resection. As the result of having material for culture and methods by which it could be accomplished, it became apparent that there were various acid-fast organisms cultured from pulmonary lesions which were not *Mycobacterium tuberculosis.* They have been listed by Runyon as unclassified mycobacteria, in which there are designated: Group I, pigment appears in an organism exposed to light during growth period; Group II, pigment is present regardless of the presence or absence of light; Group III, very little, or no pigment formation; Group IV, characterized by rapid growth, pigment lacking in most strains. These so-called four groups do not form niacin in culture which separate them from *Mycobacterium tuberculosis.* Unlike human *Mycobacterium tuberculosis,* the unclassified mycobacteria do not produce progressive disease in guinea pigs and rabbits. The unclassified organisms produce only local, or at most regional lymphatic disease in these two species. They do, how-

ever, especially groups I and III, produce fatal disease in mice. These organisms have been cultured from pulmonary lesions at the same time as *Mycobacterium tuberculosis*. They have been identified in patients with treated tuberculosis, in patients without previous history of other disease and in patients with advanced debilitating disease, such as malignancies.

The histological description of tissue changes produced by the unclassified mycobacteria in human tissue are within the range of tissue changes caused by *Mycobacterium tuberculosis*. Gross lesions resemble those of tuberculosis.

Infections due to organisms in Group I appear to be more severe than the others. Most of these have occurred in males, usually white, and more commonly 40 to 50 years of age. Symptoms resemble those of pulmonary tuberculosis: It is suggested that they are somewhat milder than those of tuberculosis. Chilliness, high fever, night sweats, loss of weight, and malaise have been less frequent and less severe in the majority. Patients suffering with cavitation may be discovered on routine examination or after hemoptysis. It is reported that the tissue reaction around the cavity is less intense than in tuberculosis. The dermal reaction to Old Tuberculin 1:1000, or P.P.D. intermediate, may be small or absent. Chapman states that "tentative presumption of anonymous mycobacterial infection may be entertained when the chest film is compatible with tuberculosis, the result of a routine tuberculin test is negative, and sputum smears are positive for acid-fast. The failure of isoniazid and streptomycin to produce persistent improvement in the form of sputum conversion, cavity closure, and clearing of infiltration may betoken unclassified mycobacterial infection."

Because of initial resistance to isoniazid and to some extent streptomycin, antimicrobial therapy of the anonymous microbacterial infections has not been as satisfactory as that of drug-susceptible human tubercle bacilli. Group III organisms appear to dominate along the Gulf Coast and the South Atlantic Seaboard. Group I appears to be more numerous in the central part of the United States. Group II is diffusely distributed.

The epidemiology of cutaneous hypersensitivity to antigens of the unclassified mycobacteria has been the subject of much study. The geographic features and the hypersensitivity suggest that the mycobacteria may be able to survive outside of hosts and may possibly be free-living. The communicability of mycobacterial infection has not been established. Greenberg and Compagna[2] draw attention to the fact that in their series approximately 75 per cent of the patients with atypical mycobacteria either had pulmonary tuberculosis previously or had been in intimate contact with proven cases of pulmonary tuberculosis. Danberg states that contact relationship does not seem to be nearly as apparent in the group of individuals infected with the unclassified mycobacteria as with those having tuberculosis.

Interesting immunological questions arise from comparison of skin reactions to human tuberculin with the reactions to antigens prepared from the unclassified mycobacteria. There is a suggestion that possibly success from the controlled human tuberculous infection may serve as a protection against infection with unclassified mycobacteria.

Suggested treatment is the same as that advised for infection with mycobacteria in tuberculosis, together with 50 to 100 milligrams of pyridoxine per day when isoniazid is being used. Response to antimicrobial therapy is often slow. There is slight probability that prolonged drug therapy will succeed in closing cavities that persist after four months. Early resection is, therefore, to be considered. If surgery cannot be contemplated Wolinsky suggests the possibility of securing improvement from the use of 500 mg. of cycloserine twice daily.

The suspicion of infection with unclassified mycobacteria may be promoted by the observation of progressive disease, tardy response to antimicrobial therapy, and a cutaneous response to tuberculin which is minimal or absent. The proof

has to be developed by the laboratory. The problem of infection with the unclassified mycobacteria will probably be one of increasing importance.

1. Danburg, Dwight S.: Clinical Significance of Infection with Atypical Acid-Fast Bacilli, 114:228, (July) 1962, J. Louisiana State M. J.

2. Greenberg, Harry, and Campagna, Maurice: The Problem of Atypical Mycobacteria, 114: 9, (September) 1962, J. Louisiana State M. J.

3. Chapman, John S.: Editorial, The Present Status of the Unclassified Mycobacteria, 33:471, (October) 1962, Am. J. Med.

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The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

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AMA-ERF

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

STANDING COMMITTEES THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY 1962 - 1963

The twenty-sixth annual meeting of The New Orleans Graduate Medical Assembly will be held March 4-7, The Roosevelt Hotel. Listed below are the Chairmen and Vice-chairmen of the Standing Committees.

Advertising and Publicity: W. E. Kittredge, M. D., Chairman, Winston H. Weese, M. D., Vice-chairman.

Attendance: Simon V. Ward, M. D., Chairman, Claude C. Craighead, M. D., Vice-chairman.

Badge: R. E. Gillaspie, M. D., Chairman, Patrick H. Hanley, M. D., Vice-chairman.

Clinical Tour: Charles B. Odom, M. D., Chairman, Curtis H. Tyrone, M. D., Vice-chairman.

Constitution and By-Laws: Robert F. Sharp, M. D., Chairman, Warren H. Hebert, M. D., Vice-chairman.

Finance: Andrew V. Friedrichs, M. D., Chairman, Eugene H. Countiss, M. D., Vice-chairman.

Halls and Screens: Murrel H. Kaplan, M. D., Chairman, Daniel C. Riordan, M. D., Vice-chairman.

Hospitals: Gilbert C. Tomskey, M. D., Chairman, Louis J. Bristow, Jr., M. D., Vice-chairman.

Hotels: John G. Menville, M. D., Chairman, C. Harrison Snyder, M. D., Vice-chairman.

Medical Motion Pictures: C. Richard Walters, M. D., Chairman, Robt. J. Meade, M. D., Vice-chairman.

Printing: Cuthbert J. Brown, M. D., Chairman, Carl N. Wahl, M. D., Vice-chairman.

Reception: Charles L. Brown, M. D., Chairman, Percy L. Querens, M. D., Vice-chairman.

Registration: Val H. Fuchs, M. D., Chairman, Frank Gallo, M. D., Vice-chairman.

Round-Table Luncheons: Walter F. Becker, M. D., Chairman, George E. Burch, M. D., Vice-chairman.

Technical Exhibits: J. Theo Brierre, M. D., Chairman, Richard L. Buck, M. D., Vice-chairman.

Telephone & Transportation: Henry M. Duhe, M. D., Chairman, Carl J. Gulotta, M. D., Vice-chairman.

MEETING OF THE NEW ORLEANS ACADEMY OF INTERNAL MEDICINE

Thursday, Jan. 17, 1963

7 p.m.—Lenfants

Dr. Charles Donegan of Florida who is President of the American Society of Internal Medicine will be the guest speaker.

W. B. SAUNDERS COMPANY ANNOUNCES $15,000 WRITING FELLOWSHIP GRANT

To mark its 75th Anniversary in 1963, The W. B. Saunders Company, medical and scientific publishers, are making available $15,000 for an unusual medical writing award. A distinguished committee will select the grantee.

The purpose of this grant is to provide financially for a year's leave of absence for a distinguished investigator who:

(1) Has been doing fruitful and significantly important biomedical laboratory research over the past several years.

(2) Would like to have time for thought and for preparation of his work in monographic form.

The recipient of the award will not have to agree to publish his monograph with the Saunders Company and will be free to write, instead of a book, a series of journal articles reviewing his research.

Areas of research in the medical sciences and clinical medicine which are acceptable for award consideration are extremely broad with a preference for those which could be translated into clinical usefulness within the foreseeable future. The investigator should be a resident of the Americas; but may be doing or have done his laboratory work outside the Western Hemisphere.

Applications for the Saunders Writing Award may be submitted in an informal style to the Chairman of the Selection Committee. The investigator should indicate briefly the character of his research and where it has been pursued, along with a short resume of his scientific background and a bibliography of his important papers.

Various members of the committee who will review applications will be men most likely to be knowledgeable about both the applicant and the nature of his work.

The Selection Committee is as follows:

Chairman—Robert F. Loeb, M. D.

Committee Members:

Philip K. Bondy, M. D., (Yale University School of Medicine); Charles G. Child, III, M. D., (The University of Michigan School of Medicine); Robert E. Cooke, M. D., (Johns Hopkins University School of Medicine); George W. Corner, M. D., (American Philosophical Society); Louis K. Diamond, M. D., (Harvard Medical School); Dr. Rene J. Dubos, (The Rockefeller Institute); Don W. Fawcett, M. D., (Harvard Medical School); Joseph Garland, M. D., (New England Journal of Medicine); Harold S. Ginsberg, M. D., (University of Pennsylvania School of Medicine); Frank L. Horsfall, Jr., M. D., (Sloan-Kettering Institute); Seymour S. Kety, M. D., (National Institute of Mental Health); Mr. Henry Allen Moe, (John Simon Guggenheim Memorial Foundation); Carl V. Moore, M. D., (Washington University School of Medicine); Robert S. Morison, M. D., (Rockefeller Foundation); Dr. Theodore C. Ruch, (University of Washington School of Medicine); Dr. Richard H. Shryock, (American Philosophical Society); DeWitt Stetten, Jr., M. D., (National Institutes of Health); Dr. Claude A. Villee, (Harvard Medical School); Mr. John T. Wilson, (The University of Chicago).

Applications should be submitted between January 1, 1963 and May 1, 1963 directly to Dr. Robert F. Loeb, care of W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa. A decision on the award-winner will be reached by August 1, 1963, and the recipient notified. Formal presentation will be made at an award dinner in October, 1963.

BOOK REVIEWS

The List Method of Psychotherapy; by Elizabeth Sher, et al., Philosophical Library, 1960, 258 p. Price, $7.50.

This badly edited and poorly arranged book presents one solution whereby the "underpaid" school teacher can improve his lot. The List organization seems to be a sort of "normal" school for abnormals, but whose focus is on XYZ's rather than ABC's.

Operating on the premise that demand is greater than supply as regards qualified psychotherapists, and presumably acting within the laws of his state, school master List's "lonely teachers club", provides graduates who are available to fill the deficit.

Saturation of the book with 235 authoritative quotations, in a total of 252 pages, confuses the whole business and gives the impression of being a pathetic effort at legitimizing the text.

Interesting gimmicks at "List Normal" include encouragement of the patient, (excuse me, client) to get a college education in addition to his "therapy." When learning with List, apparently nothing is sacred. That time honored American heritage "privacy of the john" has been invaded by relentless Listite Counsellors. Their motivation, at least on the conscious level, at witnessing or being witnessed in an excretory act, that of securing a better understanding of the patient (oop's client's) problem. Togetherness scores again! The details of this water-closet relationship are not stated completely.

Books are fine advertisements, even confused books. If an organization is "listing" just a bit, a little publicity can often put it straight. New clients are a must for any successful business venture.

After reading the first six pages the reviewer rushed to the Tulane Library in alarm for fear that the comptroller had already paid for the book. It was a relief to discover that it was a free copy from the publisher.

ERNEST CARL MILLER, M. D.

A Manual of Tropical Medicine; by George W. Hunter, III, et al., 3d. ed., Saunders, 1960. 892 p. Price, $15.00.

This latest edition of *A Manual of Tropical Medicine* which was originally published during World War II is still the most useful American volume on this subject. Initially drab, the present edition is attractively as well as strongly bound. There are many new figures including photomicrographs of good quality. The epidemiologic charts used in both previous editions have been retained. It is doubtful that these accomplish the purpose for which they are intended since they are not self explanatory.

Revision has been extensively carried out so that information contained is quite up to date. The principal adverse criticism is that which can be directed against the field of Tropical Medicine in America generally, namely that there is a lack of emphasis in clinical medicine. Of the 36 contributors only 8 are according to the notes accompanying their names to be regarded as clinicians. The result is an inevitable dependence on more sophisticated laboratory methods for diagnosis and a dearth of the practical hints for practice in underdeveloped areas which make several of the British books on Tropical Medicine so valuable in these situations. Presentation of the entire subject of Nutritional diseases in only 24 pages out of 840 does not seem adequate coverage of this important aspect of Tropical Medicine. Nevertheless for the stateside physician the book is still a good buy.

R. C. JUNG, M. D.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

WARREN—SURGERY

A valuable new volume emphasizing today's principles of surgical disease rather than mere mechanical techniques.

SCHMEISSER—A CLINICAL MANUAL OF ORTHOPEDIC TRACTION TECHNIQUES

Clearly describes and illustrates the application and advantages of traction in the management of common fractures.

WECHSLER—CLINICAL NEUROLOGY

Helpful information on the diagnosis and management of virtually every clinical neurologic problem you'll meet in daily practice.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Grune & Stratton, N. Y.: Ultramicro Methods For Clinical Laboratories, by Edwin M. Knights, Jr., M. D., Roderick P. MacDonald, Ph.D., and Jaan Ploompuu (2nd edit.).

The C. V. Mosby Co., St. Louis: Synopsis of Genitourinary Disease, by Austin I. Dodson, Jr., M. D. and J. Edward Hill, M. D. (7th edit.).

W. B. Saunders Co., Phila.: Office Procedures by Paul Williamson, M. D. (2nd edit.); Synopsis of Roentgen Signs, by Isadore Meschan, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Biochemistry of Skin in Health and Disease, by Christopher Carruthers, Ph.D.; Cosmetic Chemistry For Dermatologists, by Emil G. Klarmann, Sc.D.

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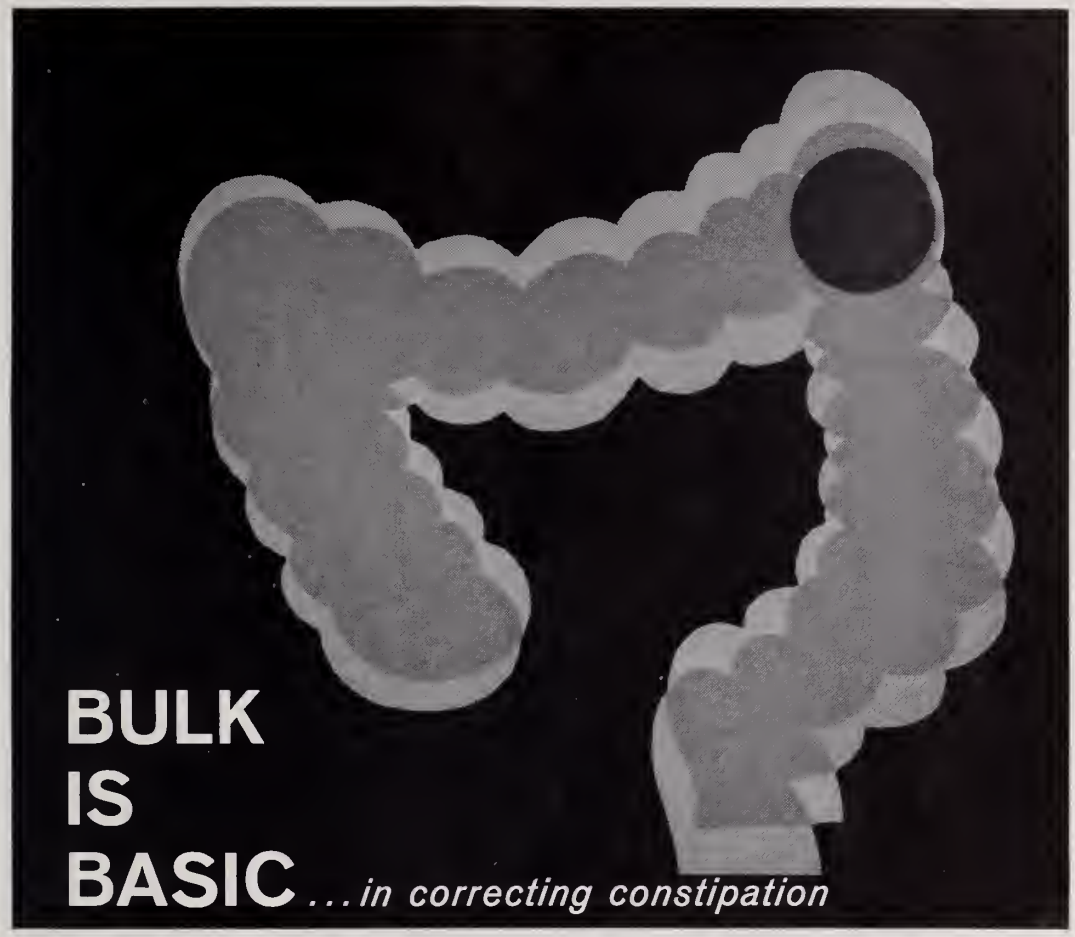
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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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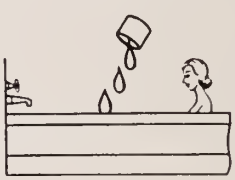
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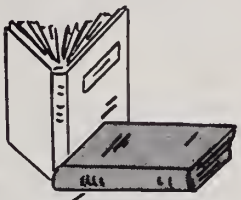
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1. Borota, A., and Grinell, R. N.: J. Amer. Geriatrics Soc., 10:413, 1962. 2. Spoor, H. J.: N. Y. State J. M., 58:3292, 1958. 3. Lubowe, I. I.: Western Med., 1:45, 1960. 4. Weissberg, G.: Clin. Med., 7:1161, 1960. 5. Lieberman, W.: Amer. J. Proctology, 12:374, 1961.

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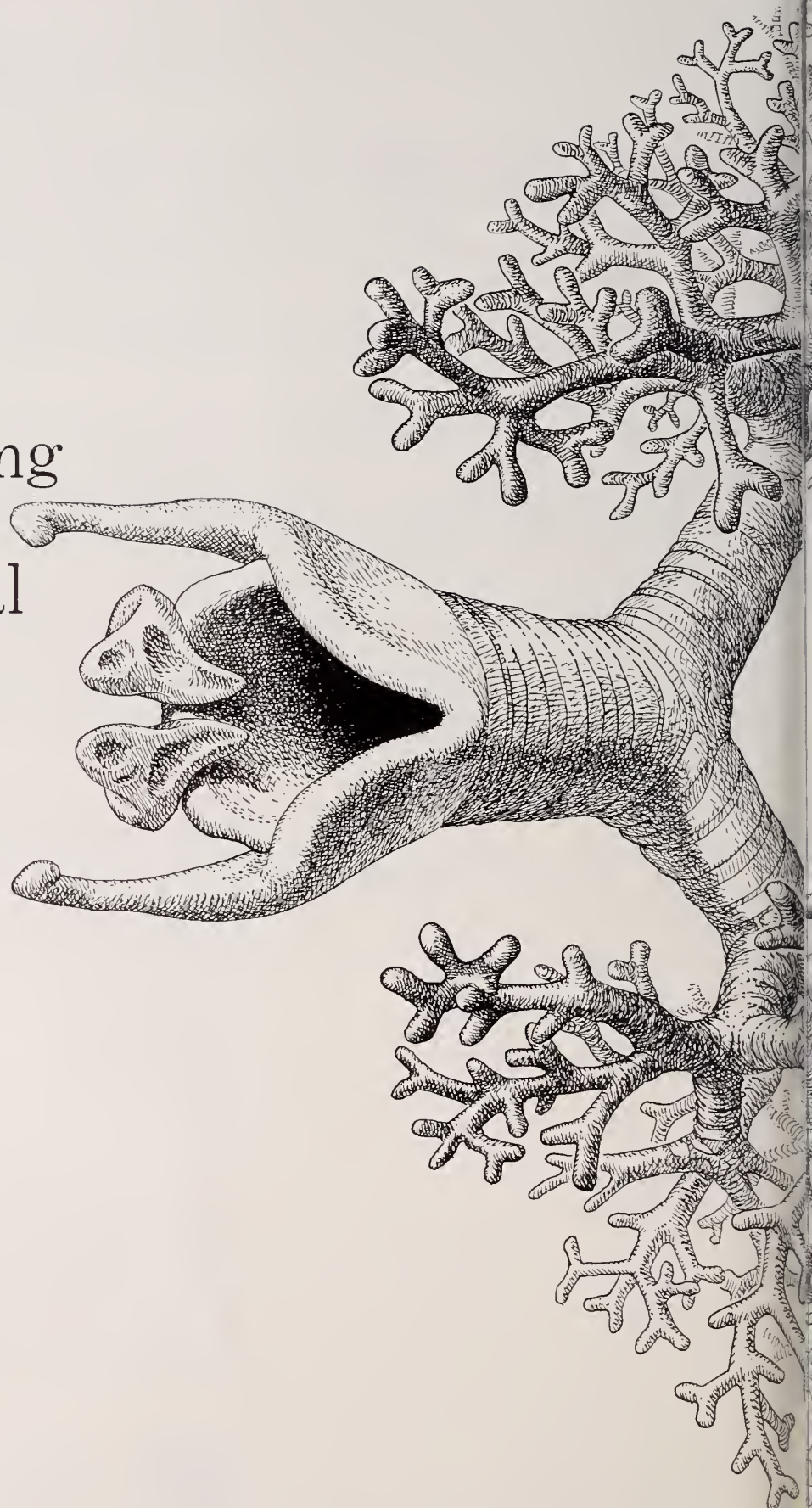
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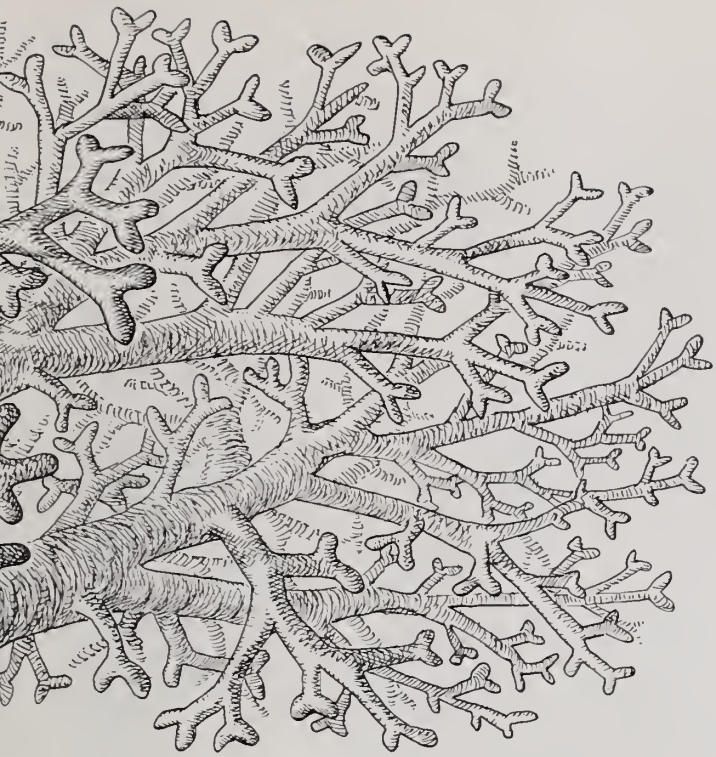
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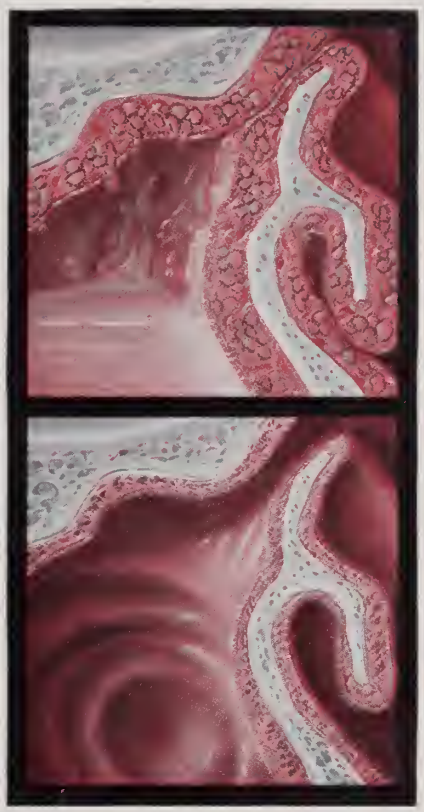
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1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

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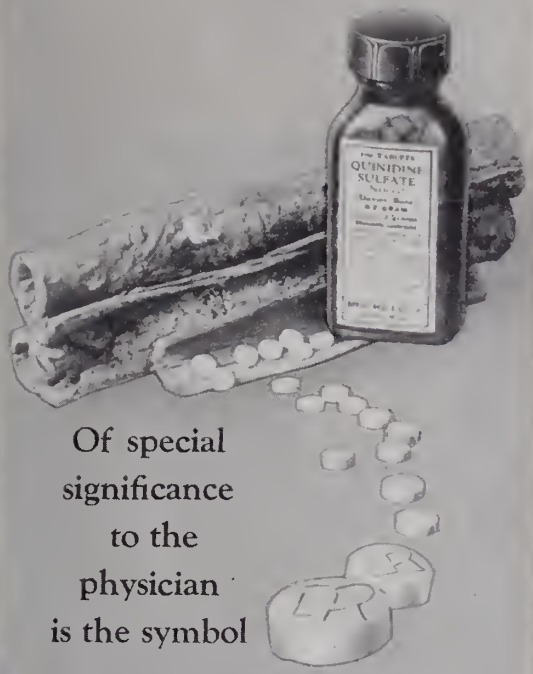
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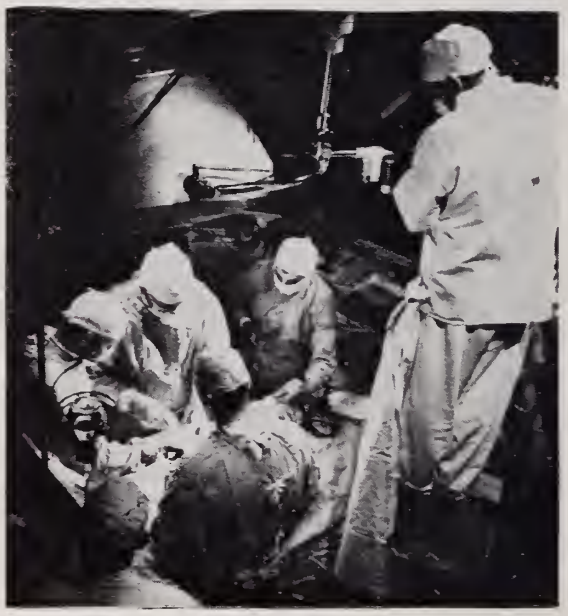
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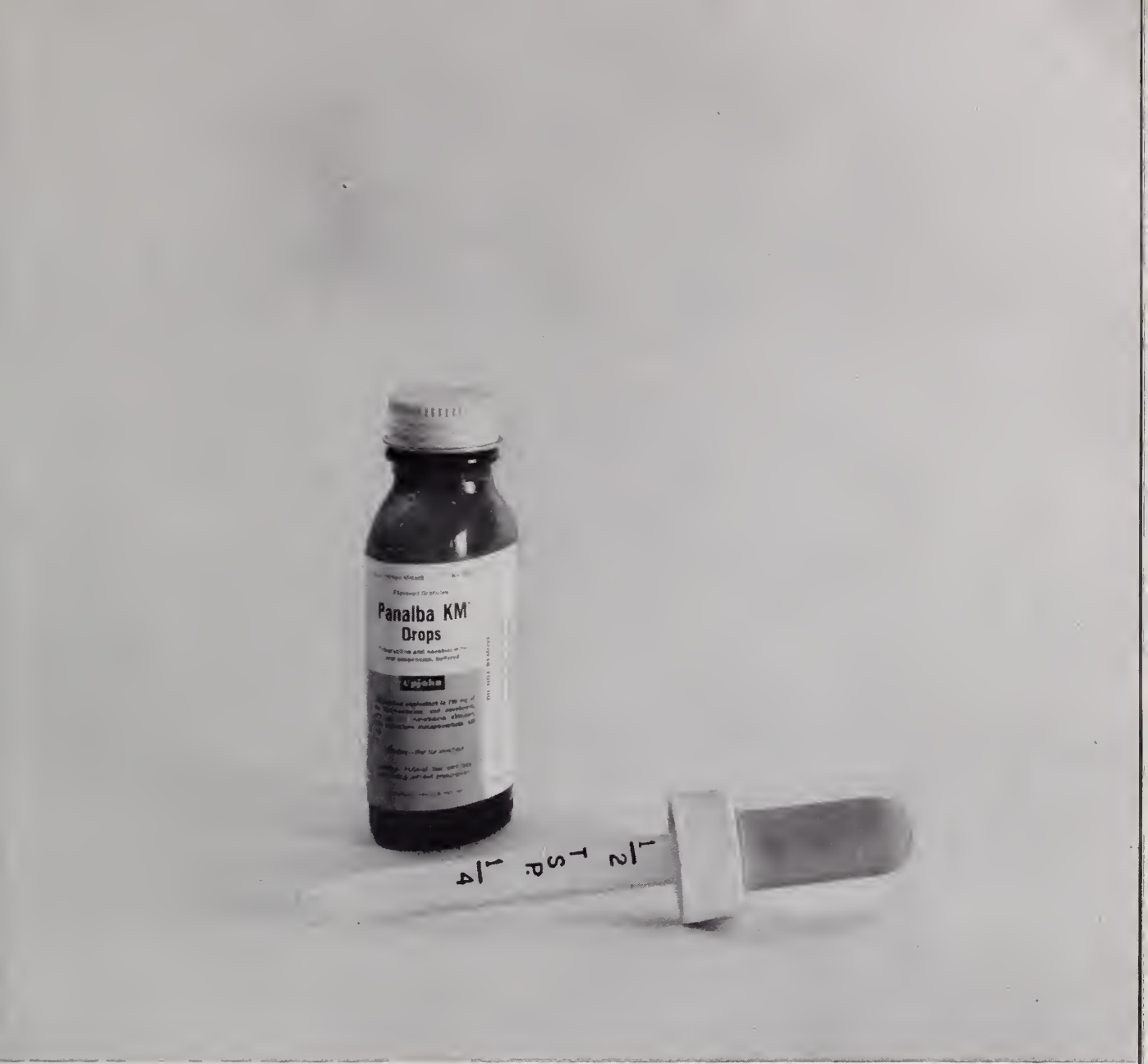
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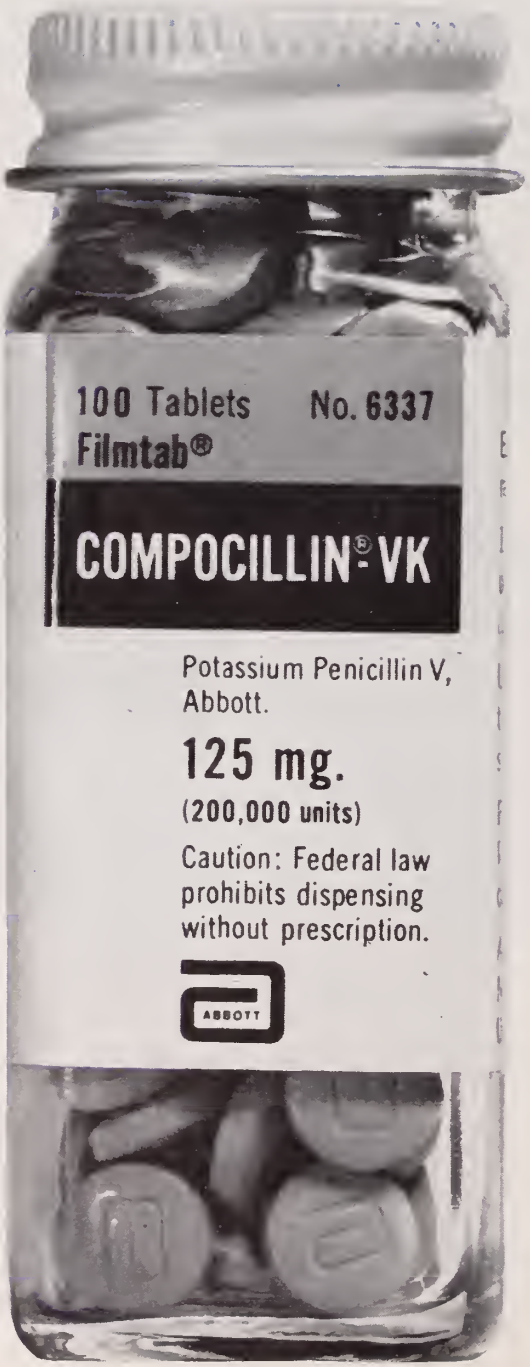
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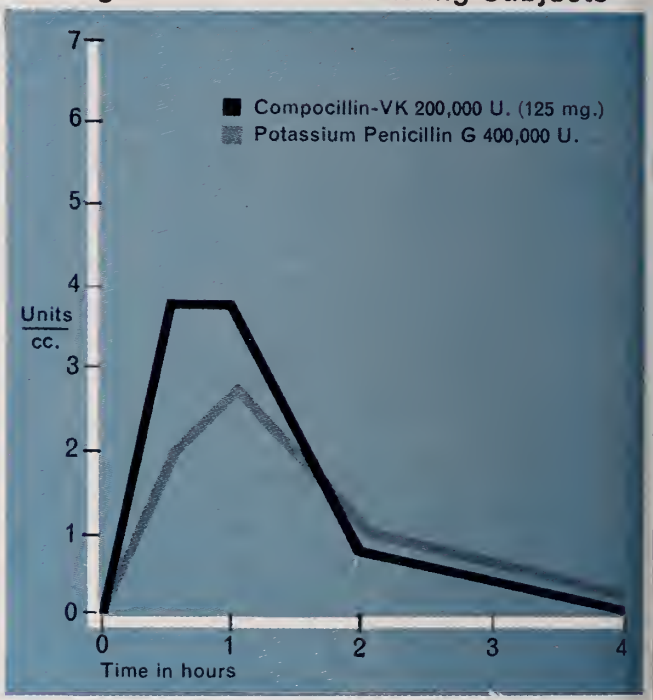
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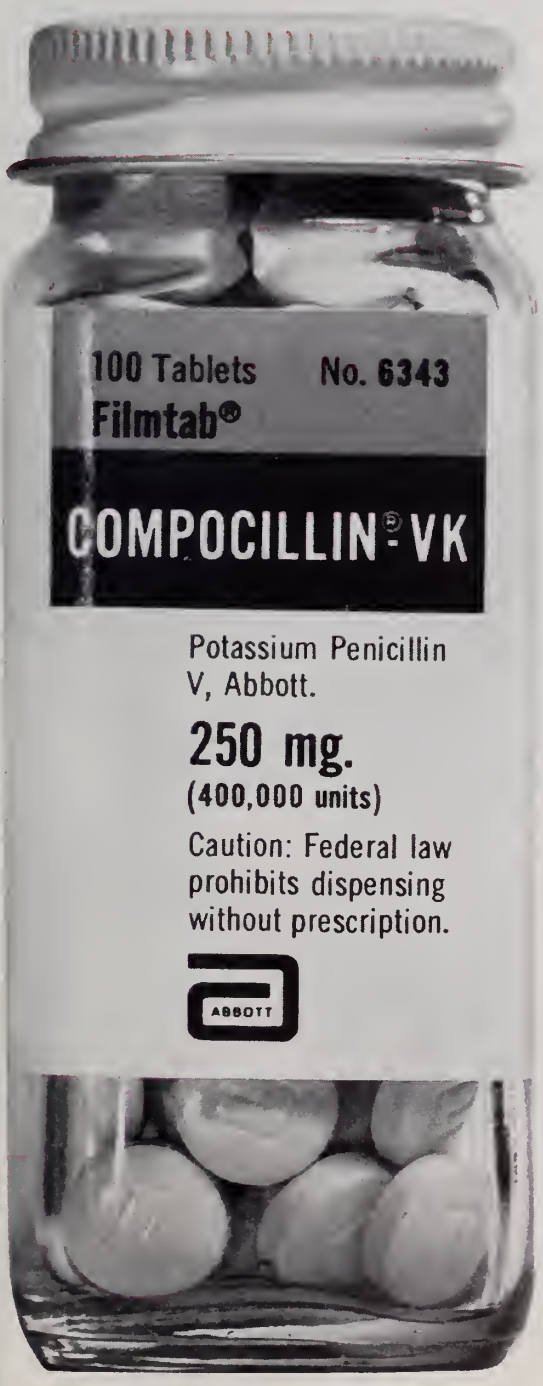
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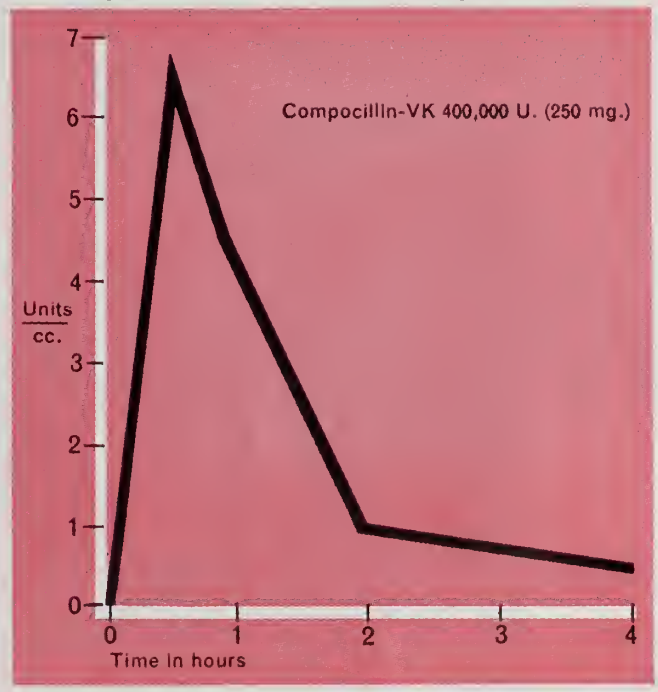
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*Asherson, N., "Acute Otitis and Mastoiditis in General Practice," H. K. Lewis & Co., Ltd., London, 1934.

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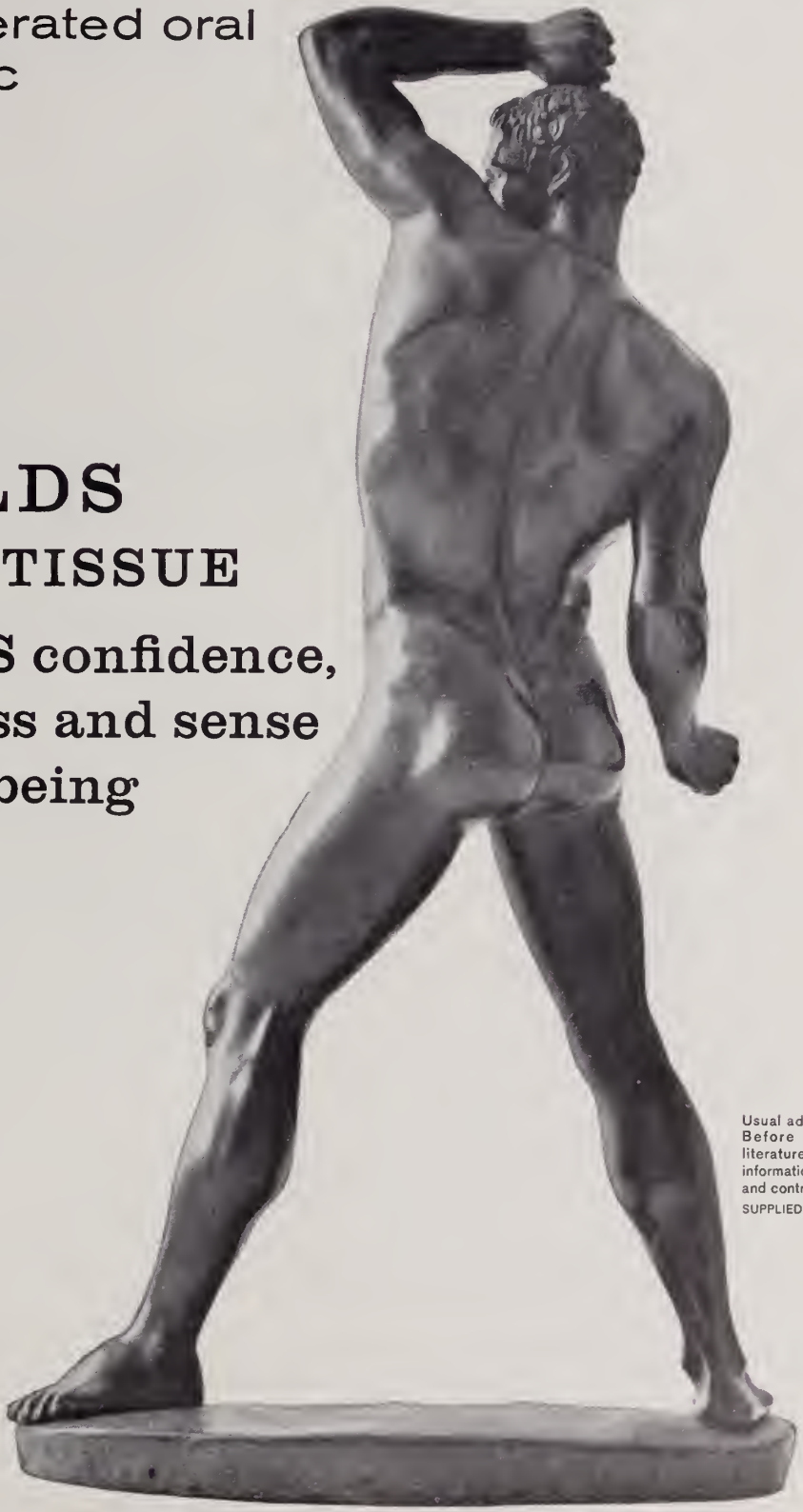
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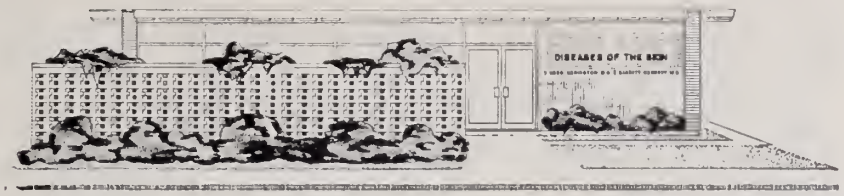
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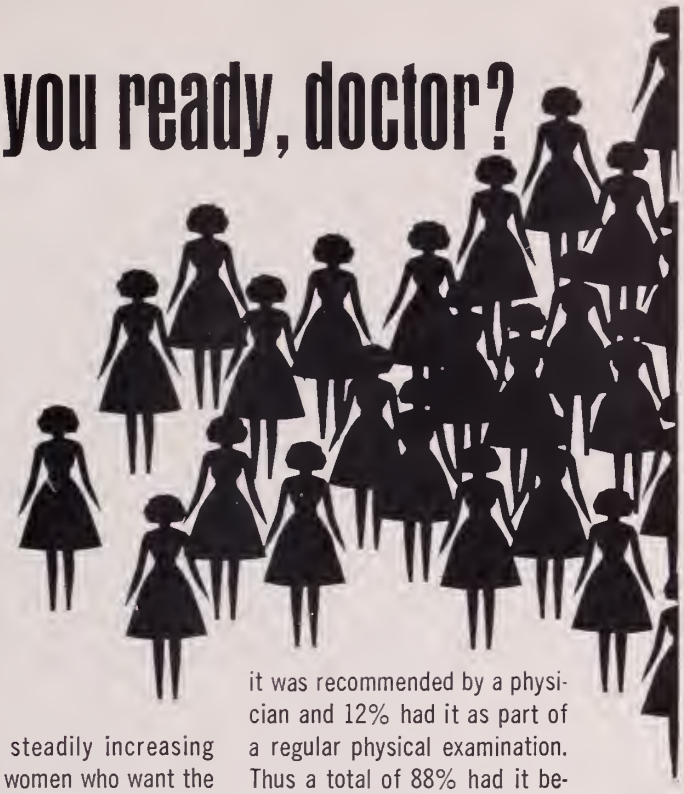
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